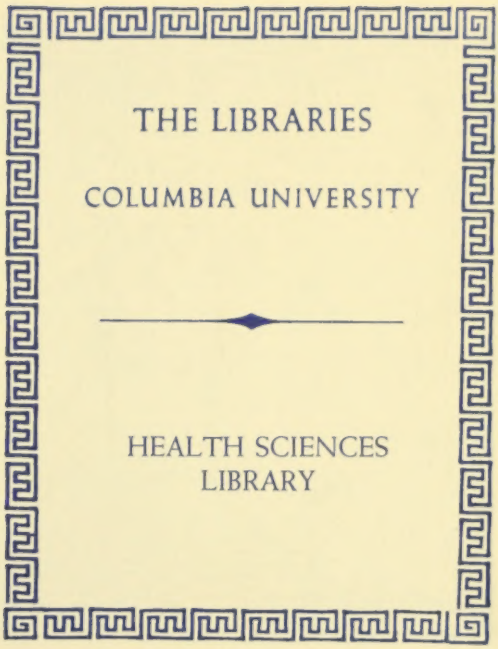
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TENTH ANNUAL REPORT

OF THE

COMMISSIONER OF HEALTH

FOR THE

COMMONWEALTH OF PENNSYLVANIA

1915

PART I

HARRISBURG, PA.:
J. L. L. KUHN, PRINTER TO THE COMMONWEALTH
1918

TABLE OF CONTENTS.

PART I.

	Page.
Letter of Transmittal,	3
Tenth Annual Report of the Commissioner of Health,	5
Organization,	5
Biographical Sketch of Dr. George W. Guthrie,	5
Important Changes,	6
Biographical Sketch of Dr. Paul P. Allen,	6
Biographical Sketch of Dr. John T. Iams,	6
Advisory Board,	9
General Division,	9
Division of Medical Inspection,	10
County Medical Inspectors,	11
Medical Deputies,	12
Railroad Medical Inspectors,	13
Township Health Officers,	14
School Medical Inspectors,	24
Division of Statistics,	37
Local Registrars,	38
Division of Laboratories and Experimental Station,	52
Division for the Control of Tuberculosis,	53
Tuberculosis Dispensaries; location and personnel,	53
Subdivision of Tuberculosis Sanatoria,	61
Pennsylvania State Sanatorium for Tuberculosis No. 1, Mont Alto,	61
Pennsylvania State Sanatorium for Tuberculosis No. 2, Cresson,	69
Pennsylvania State Sanatorium for Tuberculosis No. 3, Hamburg,	73
Division of Distribution of Biological Products,	76
Distributors of Diphtheria Antitoxin,	77
Division of Sanitary Engineering,	86
Division of Accounting and Purchasing,	89
Division of Supplies,	90
Meeeting of the Advisory Board,	90
Rules and Regulations of the Advisory Board,	91
Laws Passed by the General Assembly,	91
Epidemic History of the Year 1915,	92
Bureau of Housing: estimate of,	94
Pan-American Exposition,	94
Addresses, Conferences, Conventions, etc.,	96
Health Bulletins,	98
Pennsylvania Health Legislation of 1915,	99
Joint Reports of Epidemics of Typhoid Fever by the Medical Division and Sanitary Engineering Division,	101
Special Reports,	192
Annual Report of the General Inspector,	194
Division of Medical Inspection,	205
Organization,	207
Administrative Work,	208
Prevalence of Certain Communicable Diseases,	216
Special Reports,	222

Page.
Inspection of Schools and School Children, ... 279
Abstracts of Reports made by the County Medical Inspectors, ... 307
Statistics of Work Done by County Medical Inspectors, ... 463
Report of the Division of Vital Statistics, ... 467
Mortality, ... 469
A Sanitary Index for Measuring Efficiency, ... 475
Mortality Tables, ... 509
Births, ... 615
Birth Tables, ... 615
Communicable Diseases, ... 645
Morbidity Tables, ... 647
Marriages, ... 661
Marriage Tables, ... 663
Report of the Division of Laboratories and Experimental Station, ... 671

PART II.

Reports of the Division for the Control of Tuberculosis, ... 749
Report of the Tuberculosis Dispensaries, ... 751
Health Exhibits of the Department, ... 793
Upfollow Work of the Tuberculosis Dispensaries, ... 809
Report of the State Sanatorium at Mont Alto, ... 936
Report of the State Sanatorium at Cresson, ... 965
Report of the State Sanatorium at Hamburg, ... 992
Report of the Division of Distribution of Biological Products, ... 1015
Report of the Bureau of Housing, ... 1039
Report of the Division of Sanitary Engineering, ... 1047
Organization and Administration, ... 1050
Office Work, ... 1052
Engineering, ... 1063
Field Inspection, ... 1320
Epidemics, ... 1357
References to Special Counsel, ... 1484
Conclusions, ... 1491
Report of the Division of Accounting and Purchasing, ... 1493
Report of the Division of Supplies, ... 1515

LETTER OF TRANSMITTAL.

Commonwealth of Pennsylvania,
Department of Health,
State Capitol, Harrisburg,

February 1, 1916.

To His Excellency, Martin G. Brumbaugh, Governor of Pennsylvania:

Sir: The Act of Assembly by which the Department of Health was created prescribes that the Commissioner shall annually report on the vital statistics and sanitary conditions and prospects of the State and set forth fully the action of the Department and of its officers and agents, and the names thereof, during the past year. Such a report for the year 1915, my tenth annual report, I have now the honor to transmit to you. The reports of other work done by me as a servant of the State, in positions which I have held *ex-officio* (State Quarantine Board, Water Supply Commission, Dental Council, and Bureau of Medical Education and Licensure) are found in the respective reports made by these bodies.

SAMUEL G. DIXON,
Commissioner of Health.



TENTH ANNUAL REPORT

OF THE

COMMISSIONER OF HEALTH

OF THE

COMMONWEALTH OF PENNSYLVANIA

Soon after assuming the duties of your high office, Your Excellency renewed the appointment of the Commissioner of Health, this being the fourth time that I have had the honor to be named for this position.

ORGANIZATION.

There followed appointments of members of the Advisory Board, as far as necessary to fill the vacancies made by the expiration of terms of office. As a result, the membership of the Board became: Charles B. Penrose, M. D., Adolph Koenig, M. D., Lee Masterton, C. E., George W. Guthrie, M. D., Clarence J. Marshall, V. M. D., and Daniel P. Gerberich, M. D.

Within a few months the Advisory Board was deprived of his services by the death of Dr. Guthrie, on the first of June, at his home in Wilkes-Barre, after an illness of about nine months.

George W. Guthrie was born in Guthriesville, Chester County, January 28, 1845, and was educated in the public schools and at the State Normal School in Millersville. For a time he was active as a teacher. He went to Wilkes-Barre in 1869 and for a couple of years was the principal of a school and took an active part in the reorganization of the public schools of that town. Already his interest in medicine had come to the fore, and while busy as a teacher he took up medical studies under the preceptorship of a prominent physician of the Wyoming Valley, as was the custom at that time. In 1871 he gave up school work and entered more definitely upon the studies pertaining to his chosen profession by attending courses, first in the Bellevue Hospital Medical College in New York and later in Philadelphia as a student of the University of Pennsylvania, from which early in 1873 he received his medical degree. After a short service as a resident physician in the Philadelphia Hospital he settled in Wilkes-Barre and there became a prominent and beloved practitioner, known and esteemed not merely in his own town and county, but far and wide throughout the State. Until the last illness came upon him,

when nearly seventy years of age, he was an active practitioner, keenly alive to the progress of medicine and equally interested in the general progress and welfare of mankind. Dr. Guthrie became a member of the Advisory Board in June, 1909, by appointment of Governor Stuart. This relation to the Department of Health was continued by his reappointment by Governor Tener in 1914 and again by Governor Brumbaugh.

Important changes during the year in the staffs of various divisions of the Department are noted in the succeeding paragraphs. Changes among subordinates are indicated in the detailed list of employes which follows:

In the Medical Division, Dr. C. J. Hunt, Associate Chief Medical Inspector, resigned August 22, 1915, to associate himself with the Sanitarium at Clifton Springs, New York, and on November first I appointed Dr. H. L. Hull to the position of Associate Chief Medical Inspector. During the interim, the position was filled temporarily by Dr. George K. Strode, who afterward was appointed to take charge of the new Public Service Division. Miss Fannie A. Houseknecht, stenographer, resigned during the year.

On February 10, 1915, the Acting County Medical Inspector of Franklin, Dr. Paul P. Allen, died of pneumonia. Previous to undertaking the duties of the County Medical Inspector, he served the State as Dispensary Physician.

Dr. John T. Iams, County Medical Inspector of Greene County, died suddenly, February 15, 1915, from acute dilation of the heart, at the age of 69 years. Dr. Iams was a graduate of the Bellevue Medical School of the class of 1871 and was a Fellow of the American Medical Association. At one time he was Vice President of the Pennsylvania Training School at Morganza, and his services to the Commonwealth of Pennsylvania covered a period of twenty years, dating back to 1895 when he became County Medical Inspector of Greene County, in which position he served until his death, first under the administration of the State Board of Health and later an officer of the State Department of Health.

Upon his death, his son, Dr. S. H. Iams, of Waynesburg, was appointed Acting County Medical Inspector.

Dr. L. T. Kennedy, County Medical Inspector of Schuylkill County, resigned his position in February, 1915.

On February 1, 1915, Dr. J. B. Rogers, of Pottsville, was appointed County Medical Inspector of Schuylkill County.

On February 26, 1915, Dr. John H. Kinter, formerly a physician in the Mont Alto Sanatorium, was appointed County Medical Inspector of Franklin County.

Among our health officers there were nine deaths and fifty-nine retirements. I made sixty-two new appointments. J. Edgar Baily in Greene County has continued to act throughout the year and M. E.

Wescott in Lycoming County acted until April, although these men were inadvertently shown as retired in the 1914 Report. The deaths during the year were as follows: in January, R. P. Smith, of Mapleton Depot, Huntingdon County, and Dr. J. D. Baker, of Eschol, Perry County; in February, W. S. Young, East Prospect, York County; in March, W. C. Cunningham, of Brush Valley, Indiana County; in May, Thomas Devlin, of Cumbola, Schuylkill County; in June, J. D. Stoughton, of Lock Haven, Clinton County; in November, W. E. Kemmerer, of Easton, Northampton County; and in December, I. J. Weaver, of Mechanicsburg, Cumberland County, and J. H. Spence, of Bernice, Sullivan County.

The following six health officers retired in 1914, although severance of their connection with the Department was not entirely complete at the end of the year and was not indicated in the 1914 list of officers: Dr. J. M. E. Brown, Clarion County; Dr. J. A. Miller, Clearfield County; Robert M. Buck, Erie County; Guy Van Horn, Forest County; W. J. Park, Jefferson County; and Harry L. Fisher, Luzerne County.

In the Division for the Control of Tuberculosis there were many changes among staff officials of the Subdivision of Tuberculosis Dispensaries. The loss by death of dispensary physicians Doctors Paul Allen and J. T. Iams has been noted among the references to County Medical Inspectors, which offices they also filled.

The following appointments of dispensary physicians, assistant physicians and specialists were made in the course of the year: Dr. Ruth M. Lance (Wilkes-Barre), January 1; Dr. Jos. Stockler (Reading), January 20; Dr. J. B. Rogers (Pottsville), February 1; Dr. John H. Kinter (Chambersburg), February 25; Dr. S. H. Iams (Waynesburg), March 13; Dr. Scott L. Norris (Homestead), April 12; Dr. H. J. Schmoyer (South Bethlehem), April 12; Dr. M. J. Patrick (Shenandoah), September 21; Dr. R. C Davis (Johnstown), October 1; Dr. Thomas Klein (Philadelphia), October 1; Dr. Waldo Hull (Williamsport), December 1; Dr. Leo Flannery (Philadelphia), December 20.

The following were made dispensary nurses or substitute nurses: Miss Viola Kennedy, Miss Catharine Merrick, Miss Maude E. Griffith, Miss Tirzah Martin, Miss Edith Flynn, Miss Rose W. Murphy, Miss Estelle Zimmerman, Miss Estelle Feist, Miss Ruth B. Rae, Miss Nancy Martin, Miss Estelle B. Knight, Miss B. Mae Patterson, Miss Clara Knox, Miss Margaret Craig, Miss Ruth Bowen, Miss Jennie May and Miss Isabelle Patterson.

The following nurses were transferred during the year to different dispensaries from those to which they were previously attached: Miss Sara A. Crooks, Miss Irene Harding, Miss Elda Graybill and Mrs. Jane P. Miller. In the Harrisburg office Miss Alma G. Ernest was promoted to be a stenographer and Miss Helen Campfield, clerk, was

transferred to this office from another division of the Department, Other changes and promotions among the dispensaries are indicated in the detailed list of employes.

Resignations among the dispensary physicians were as follows: Dr. L. T. Kennedy (Pottsville), January 31; Dr. G. H. Boyer (Pottsville), June 1; Dr. Wesley F. Kunkel (Williamsport), December 1; Dr. W. P. Thomason (Easton), December 1; and Dr. S. Reichard (Wilkes-Barre), December 1.

The following dispensary nurses retired: Miss Blanche MaWhinney, Miss Lessie W. Underwood, Miss Bess Johns, Miss Anna Prather, Miss Blanche Yowler, Miss Emma Clemence, Miss Veronica D. Kazakevicz, Miss Ella B. Featherstone, Miss Alice M. Nicely, Miss B. Mae Patterson, Miss Ida E. Tinsley, Miss Sara K. Trimble and Miss Clara Knox. Miss Margaret McGannon, stenographer in the Harrisburg office, resigned.

For the Sanatorium at Mont Alto the following changes are to be noted: the promotion of Dr. Henry A. Gorman to the position of First Assistant Physician, the appointments of Assistant Physicians Drs. C. H. Cherry, J. J. Cosgrove, Wm. R. McKelvey, Louis A. Packard, S. H. Rinehardt, Nathaniel G. Schafritz, Maurice T. Sloane, H. M. Stewart, Wesley C. Thomas, Wm. W. Woods, Chas. H. Haralson, Geo. D. Heist, also bacteriologist Gillman C. Dolley, M. D., and Margaret Bell as head nurse at the Children's Hospital. The following resignations are to be noted: First Assistant Physician Wm. T. Davies; Assistant Physicians Drs. Joseph Aaronoff, J. J. Cosgrove, George W. Farquhar, Wm. R. McKelvey, S. H. Rinehardt, Herman Schlaff, Samuel A. Silk, Thomas A. Stevens, Joseph A. Stockler, Wesley C. Thomas, Leon J. Tunitsky and George D. Heist; Bacteriologists, Dr. Gillman C. Dolley and Elmer E. McKee; stenographer Jane B. Kenyon; and Catherine I. Cobb, head nurse at the Children's Hospital.

At the Cresson Sanatorium Dr. M. E. Cowen was promoted to the position of First Assistant Physician and Assistant Physicians Drs. Joseph I. Levy and Lina D. Schwatt were appointed during the year. Resignations are to be noted as follows: Drs. D. S. Brachman and Joseph I. Levy.

At the Hamburg Sanatorium I appointed Assistant Physicians Drs. Bernard C. Healey and Chas. E. McPeek; also George B. Kunkel, M. D., of Harrisburg to be Consulting Surgeon and Joseph A. Stockler, M. D., of Reading to be Visiting Laryngologist; and Assistant Mechanic Chas. J. Delozier.

The resignations included Assistant Physicians Drs. Paul E. Schwarz, Ray D. Saul and Chas. E. McPeek, and Assistant Mechanic W. H. Addams.

In the Division of Sanitary Engineering, in the force of Assistant Engineers, I appointed Henry P. Drake, Howard R. Stocker and Theodore L. Welles, Jr., and Chas. R. Forbes resigned; among the

draftsmen F. Marion Sourbeer resigned; Richard F. Einstein, clerk, resigned; and among the Sanitary Inspectors I appointed C. L. Berkmeyer, Jas. S. Biddle, J. N. Brosius, Wm. Goodman, John C. Groome, Jacob Holtzman, H. T. Hunsicker, Chas. J. Kinsler, L. S. McLaughlin, H. T. Shadduck, Thomas Moore, John Sheehan, Wm. Shonleber, Arthur D. Smith, J. E. Sullivan, George S. Trafford, Walter C. Welliver. The following inspectors resigned: J. Creighton Yeager, C. L. Berkmeyer, Berkey H. Boyd, Wm. Davis, Thomas Moore, W. H. Morris, W. E. Rice, J. W. Roebuck, Louis Stevens and W. H. Whitman. Inspector M. Z. Frederick died on January 2nd.

The appointment of Mr. John Molitor to be the new head of the Bureau of Housing on February 23, 1915, is notable. He is listed among the staff officers of the General Division, within which the work was conducted during the year.

The appointment of Dr. George K. Strode to take charge of the new Public Service Division is also to be noted. He too is listed in the staff of the General Division and in it the preliminary work was done.

As required by law, I here furnish a list of officers and agents of the Department during the year 1915.

STATE CAPITOL, HARRISBURG.

Commissioner of Health:—Samuel G. Dixon, M. D., LL. D.,
Bryn Mawr, Montgomery County.

Advisory Board:—Charles B. Penrose, M. D., Philadelphia.
Adolph Koenig, M. D., Pittsburgh, Allegheny County.
*B. H. Warren, M. D., West Chester, Chester County.
Lee Masterton, C. E., Johnstown, Cambria County.
†George W. Guthrie, M. D., Wilkes-Barre, Luzerne County.
Clarence J. Marshall, V. M. D., Philadelphia.
Daniel P. Gerberich, M. D., Lebanon, Lebanon County.

*Retired. †Deceased.

GENERAL DIVISION.

Assistant to Commissioner:—Joseph W. Warren, M. D., Bryn Mawr, Montgomery County.
Secretary:—Harry Lindley Hosford, Philadelphia.
General Inspector:—Charles W. Webbert, Boiling Springs, Cumberland County.
Chief of Bureau of Housing (Acting):—John Molitor, Philadelphia.
Chief of Division of Public Service:—George K. Strode, M. D., Philadelphia.
Auditor:—Miss Ivy E. Huber, Harrisburg, Dauphin County.
Stenographers:—Miss Edna Hosler, Carlisle, Cumberland County.
Miss Violet B. Rowland, West Fairview, Cumberland County.
Messenger:—Edward F. Eisely, Harrisburg, Dauphin County.
Night Clerk:—Roy G. Miller, New Kingston, Cumberland County.
Multigraph Operator:—R. K. Styer, Perkiomenville, Montgomery County.
Janitor:—John B. Sample, Harrisburg, Dauphin County.

DIVISION OF MEDICAL INSPECTION.

Chief Medical Inspector:—B. Franklin Royer, M. D., Philadelphia.

Associate Chief Medical Inspector:—*C. J. Hunt, M. D., Philadelphia.
Howard L. Hull, M. D., Chambersburg, Franklin County.

Assistant Chief Medical Inspector:—John J. Mullowney, M. D., Philadelphia.

Chief Clerk:—John G. Ziegler, Lebanon, Lebanon County.

Stenographers:—*Miss Fannie A. Houseknecht, Muncy, Lycoming County.
Mrs. Nell Dalzell Buch, Reading, Berks County.
Miss Nettie J. Hipple, Marysville, Perry County.
Miss Nora C. Cantwell, Williamsport, Lycoming County.
Miss M. Florence Keffer, Reading, Berks County.
Miss Nena O. Crouse, Waynesboro, Franklin County.

Clerks:—Mrs. Rosa Van Horn, Harrisburg, Dauphin County.
Miss Maude Van Ormer, Harrisburg, Dauphin County.
Miss Aida Beauter, Wellsboro, Tioga County.
Miss Bess Fairbank, McKees Mills, Clearfield County.
Miss Irene McCalley, Harrisburg, Dauphin County.
Miss Florence Eckert, Lancaster, Lancaster County.
Miss Caroline E. Grove, Harrisburg, Dauphin County.
Miss Ada M. Hartman, Mifflintown, Juniata County.
*Mrs. Edna P. Rockefeller, Erie County.
Mrs. Helen M. Brown, Harrisburg, Dauphin County.
Miss Nan McCauley, Harrisburg, Dauphin County.
Miss Kathryn A. Stailey, Liverpool, Perry County.

Temporary Clerks:—Miss Edith K. Leahy, Lebanon County.
Miss Edith Z. Dunner, Dauphin County.
Miss Blanche Bower, Columbia County.
Mrs. Alice H. Johnson, Montgomery County.
Miss Mildred B. Ritter, Dauphin County.
Miss Elmyra R. Stahley, Lebanon County.
Miss Kathryn Darby, Dauphin County.
Miss Anetta L. Altmaier, Dauphin County.
Mrs. Sara Zink, Dauphin County.
Miss Alice H. Miller, Lycoming County.
Miss L. Leona Teeter, Franklin County.
Miss Marie Toomey, Dauphin County.
Miss Anna M. Shelley, Juniata County.
Miss Marie Melville, Dauphin County.
Mrs. Annie M. Shearer, Cumberland County.
Mrs. Elizabeth R. Murray, Dauphin County.
Miss E. Edith Wunder, Berks County.
Mrs. Kathryn R. Meyers, Dauphin County.
Miss Mary C. O'Boyle, Schuylkill County.
Mrs. Scott Wright, Dauphin County.
Miss Marian Parry, Lebanon County.
Miss Louise A. McIvor, Cumberland County.
Miss Etta R. Bitting, Perry County.
Miss Mary M. McGuire, Dauphin County.
Miss Laura Strohm, Columbia County.
Miss Esther E. Reber, Schuylkill County.

*Retired.

Miss Myrtle R. Liebig, Northumberland County.
Mrs. Blanche Keiter, Juniata County.
Miss Mary J. Mussina, Lebanon County.
Miss Mary E. Hoffman, Dauphin County.
Miss Margaret K. Oyster, Dauphin County.
Mrs. Helen T. Forrer, Dauphin County.
Miss Marie Boileau, Dauphin County.
Miss Mary Schoffstall, Dauphin County.
Mrs. Agnes M. Boyd, Dauphin County.
Miss Erma M. Klucker, Cumberland County.
Mrs. Sue Hagy, Union County.
Miss Julia E. Suesserott, Franklin County.
Miss Marian Nashore, Juniata County.
Mrs. M. V. Beidleman, Dauphin County.
Mrs. Sara Corning, Dauphin County.
Mrs. K. E. McCaleb, Cumberland County.
Mrs. H. C. Schimmelfeng, Dauphin County.
Miss Isabelle C. Hoffman, Philadelphia.
Miss Helen Campfield, Crawford County.

COUNTY MEDICAL INSPECTORS.

County.	Inspector.	Post Office.
Adams,	Dr. John R. Dickson,	Gettysburg.
Allegheny,	Dr. S. M. Rinehart,	Pittsburgh (N. S.)
Armstrong,	Dr. T. N. McKee,	Kittanning.
Beaver,	Dr. Bruce Snodgrass,	Beaver Falls.
Bedford,	Dr. Walter de la M. Hill,	Everett.
Berks,	Dr. Israel Cleaver,	Reading.
Blair,	Dr. J. D. Findley,	Altoona.
Bradford,	Dr. T. Ben Johnson, Jr.,	Towanda.
Bucks,	Dr. I. Swartz Plymire,	Doylestown.
Butler,	Dr. H. D. Hockenberry,	West Sunbury.
Cambria,	Dr. W. E. Matthews,	Johnstown.
Cameron,	Dr. H. S. Falk,	Emporium.
Carbon,	Dr. E. G. Bray,	Mauch Chunk.
Centre,	Dr. S. M. Huff,	Bellefonte.
Chester,	Dr. Joseph Scattergood,	West Chester.
Clarion,	Dr. F. P. Phillips,	Clarion.
Clearfield,	Dr. S. C. Stewart,	Clearfield.
Clinton,	Dr. R. B. Watson,	Lock Haven.
Columbia,	Dr. S. B. Arment,	Bloomsburg.
Crawford,	Dr. J. K. Roberts,	Meadville.
Cumberland,	Dr. H. B. Bashore,	West Fairview.
Dauphin,	Dr. C. R. Phillips,	Harrisburg.
Delaware,	Dr. Hiram M. Hiller,	Chester.
Elk,	Dr. J. G. Flynn,	Ridgway.
Erie,	Dr. J. W. Wright,	Erie.
Fayette,	Dr. O. R. Altman,	Uniontown.
Forest,	Dr. F. J. Bovard,	Tionesta.
Franklin,	Dr. Paul P. Allen,†	Chambersburg.
	Dr. John H. Kinter,	St. Thomas.
Fulton,	Dr. J. W. Mosser,	McConnellsburg.
Greene,	Dr. J. T. Iams,†	Waynesburg.
	Dr. S. H. Iams (Acting),	Waynesburg.
Huntingdon,	Dr. H. C. Frontz,	Huntingdon.
Indiana,	Dr. W. A. Simpson,	Indiana.
Jefferson,	Dr. S. Meigs Beyer,	Punxsutawney.
Juniata,	Dr. W. H. Banks,	Mifflintown.
Lackawanna,	Dr. J. C. Reifsnyder,	Scranton.
Lancaster,	Dr. J. L. Mowery,	Lancaster.
Lawrence,	Dr. J. D. Moore,	New Castle.
Lebanon,	Dr. A. J. Riegel,	Lebanon.
Lehigh,	Dr. J. T. Butz,	Allentown.
Luzerne,	Dr. Charles H. Miner,	Wilkes-Barre.
Lycoming,	Dr. C. W. Youngman,	Williamsport.
McKean,	Dr. Wade Patton,	Bradford.

†Deceased.

COUNTY MEDICAL INSPECTORS—Continued.

County.	Inspector.	Post Office.
Mercer,	Dr. P. P. Fisher,	Sharon.
Mifflin,	Dr. C. H. Brisbin,	Lewistown.
Monroe,	Dr. W. L. Angle,	East Stroudsburg.
Montgomery,	Dr. H. H. Whitcomb,	Norristown.
Montour,	Dr. Cameron Shultz,	Danville.
Northampton,	Dr. Edgar M. Green,	Easton.
Northumberland,	Dr. R. H. Simmons,	Shamokin.
Perry,	Dr. A. R. Johnston,	New Bloomfield.
Pike,	Dr. W. B. Kenworthey,	Milford.
Potter,	Dr. E. H. Ashcraft,	Coudersport.
Schuylkill,	Dr. L. T. Kennedy,*	Pottsville.
	Dr. J. B. Rogers,	Pottsville.
Snyder,	Dr. H. F. Wagenseller,	Selinsgrove.
Somerset,	Dr. C. P. Large,	Meyersdale.
Sullivan,	Dr. J. L. Christian,	Lopez.
Susquehanna,	Dr. H. B. Lathrop,	Springville.
Tioga,	Dr. C. W. Webb (Acting),	Wellsboro.
Union,	Dr. C. H. Dimm,	Mifflinburg.
Venango,	Dr. J. P. Strayer,	Oil City.
Warren,	Dr. C. H. Schmehl,	Warren.
Washington,	Dr. C. B. Wood,	Monongahela.
Wayne,	Dr. L. B. Nielsen,	Honesdale.
Westmoreland,	Dr. I. M. Portser,	Greensburg.
Wyoming,	Dr. H. L. McKown,	Tunkhannock.
York,	Dr. J. S. Miller,	York.

*Retired.

MEDICAL DEPUTIES.*

Name.	Address.	County.
Dr. Adolph Koenig,	Pittsburgh,	Allegheny.
Dr. W. J. McGeary,	Sharpsburg,	Allegheny.
Dr. H. O. Mateer,	Pittsburgh,	Allegheny.
Dr. George E. Cramer,	Templeton,	Armstrong.
Dr. Albert G. Dymond,	New Enterprise,	Bedford.
Dr. A. H. Bauscher,	Temple,	Berks.
Dr. Walter M. Bartolet,	Reading,	Berks.
Dr. J. W. Eckert,	Temple,	Berks.
Dr. L. G. Hain,	Shillington,	Berks.
Dr. F. L. R. Mattern,	Fleetwood,	Berks.
Dr. Harry B. Schaeffer,	Shillington,	Berks.
Dr. M. B. Ballard,	Troy,	Bradford.
Dr. H. O. Kingsley,	Burlington,	Bradford.
Dr. J. W. Parsons,	Canton,	Bradford.
Dr. G. H. B. Terry,	Wyalusing,	Bradford.
Dr. W. T. Lowry,	North Washington,	Butler.
Dr. B. F. Bowers,	St. Benedict,	Cambria.
Dr. Charles C. Custer,	Johnstown,	Cambria.
Dr. F. C. Jones,	Ebensburg,	Cambria.
Dr. Charles E. Shultz,	Portage,	Cambria.
Dr. S. M. Huff,	Bellefonte,	Centre.
Dr. E. L. Jones,	Philipsburg,	Centre.
Dr. J. R. Hedly,	Berwyn,	Chester.
Dr. I. J. Klevan,	Unionville,	Chester.
Dr. J. W. Merryman,	Toughkenamon,	Chester.
Dr. F. K. Booth,	Fairmount City,	Clarion.
Dr. G. B. Gohsen,	Coalport,	Clearfield.
Dr. A. W. Clouse,	Geneva,	Crawford.
Dr. E. Carl Weirick,	Enola,	Cumberland.
Dr. John S. Eynon,	Chester,	Delaware.
Dr. J. W. Wood,	Chester,	Delaware.
Dr. David W. Thomas,	Force,	Elk.
Dr. L. N. Burchinal,	Point Marion,	Fayette.
Dr. Robert H. Jeffrey,	Uniontown,	Fayette.
Dr. Lee Odell,	Marienville,	Forest.

MEDICAL DEPUTIES—Continued.

Name.	Address.	County.
Dr. E. W. Palmer,	Greencastle,	Franklin.
Dr. W. C. Schultz,	Waynesboro,	Franklin.
Dr. S. D. Shull,	Chambersburg,	Franklin.
Dr. A. L. Eddy,	Greensboro,	Greene.
Dr. Frank S. Ullom,	Waynesburg,	Greene.
Dr. H. C. Wilson,	Warriors Mark,	Huntingdon.
Dr. Ray Alexander,	Bolwin,	Indiana.
Dr. William J. Salisbury,	Armagh,	Indiana.
Dr. R. M. Quig,	East Waterford,	Juniata.
Dr. J. W. Knedler,	Moscow,	Lackawanna.
Dr. James A. Smith,	Reamstown,	Lancaster.
Dr. C. H. Witmer,	Lancaster,	Lancaster.
Dr. Samuel Warner,	New Castle,	Lawrence.
Dr. John J. Light,	Lebanon,	Lebanon.
Dr. H. E. Maulfair,	Lebanon,	Lebanon.
Dr. Edward W. Bixby,	Wilkes-Barre,	Luzerne.
Dr. S. A. Everett,	Freeland,	Luzerne.
Dr. W. A. Foster,	Mountain Top,	Luzerne.
Dr. G. L. Howell,	Trucksville,	Luzerne.
Dr. P. H. Jamison,	Nescopeck,	Luzerne.
Dr. E. J. Schlicher,	Wapwallopen,	Luzerne.
Dr. F. F. Castlebury,	Roaring Branch,	Lycoming.
Dr. Charles S. Flagler,	Stroudsburg,	Monroe.
Dr. Russel R. Keeler,	Harleysville,	Montgomery.
Dr. W. J. Wirght,	Skippack,	Montgomery.
Dr. Harry W. Howland,	Gaines,	Potter.
Dr. J. F. Bryson,	Girardville,	Schuylkill.
Dr. O. J. Carlin,	Pottsville,	Schuylkill.
Dr. A. B. Fleming,	Shenandoah,	Schuylkill.
Dr. C. Gruhler,	Shenandoah,	Schuylkill.
Dr. David J. Hawk,	Tower City,	Schuylkill.
Dr. G. S. Hensyl,	Mahanoy City,	Schuylkill.
Dr. George A. Merkel,	Minersville,	Schuylkill.
Dr. A. S. Ryland,	Valley View,	Schuylkill.
Dr. J. W. Schultze,	Tremont,	Schuylkill.
Dr. H. H. Stewart,	Friedensburg,	Schuylkill.
Dr. John R. Stein,	Shenandoah,	Schuylkill.
Dr. H. M. Washy,	Shenandoah,	Schuylkill.
Dr. A. M. Lichty,	Meyersdale,	Somerset.
Dr. H. M. Fry,	Rush,	Susquehanna.
Dr. H. S. Hooven,	Harford,	Susquehanna.
Dr. W. E. Park,	New Milford,	Susquehanna.
Dr. John G. Wilson,	Montrose,	Susquehanna.
Dr. Ben F. Coe,	Clymer,	Tioga.
Dr. John M. Gentry,	Wellsboro,	Tioga.
Dr. E. A. Kuhns,	Emlenton,	Venango.
Dr. J. B. Perrine,	Wesley,	Venango.
Dr. E. J. Kelly,	Chandlers Valley,	Warren.
Dr. H. P. Phillips,	Bear Lake,	Warren.
Dr. W. C. Bovard,	Mamont,	Westmoreland.
Dr. W. Craig Byers,	Webster,	Westmoreland.
Dr. W. L. Fennel,	Salina,	Westmoreland.
Dr. Roland Jessup,	York,	York.

*Persons deputized from time to time by the County Medical Inspectors to act for them in some special investigation.

RAILROAD MEDICAL INSPECTORS.

(Commissioned by the Commissioner of Health but not paid by the State.)

PENNSYLVANIA RAILROAD COMPANY.

Dr. S. W. Latta, Chief Medical Examiner, Philadelpria.

Dr. A. D. Van Dyke, Renovo.
*Dr. J. M. Wells, Trenton, N. J.
Dr. J. L. Bower, Philadelphia.
*Dr. J. D. Shull, Baltimore, Md.
Dr. D. W. Nead, Reading.
Dr. W. G. Moorhouse Columbia.
Dr. J. B. Hileman, Harrisburg.
Dr. A. T. Poffenberger, Sunbury.
Dr. G. C. Troutman, Williamsport.
Dr. J. L. Wright, Erie.
Dr. R. H. Moore, Huntingdon.
Dr. H. W. Pownall, Tyrone.
Dr. W. B. Diefenderfer, Altoona.
Dr. R. J. Turk, Cresson.
Dr. C. W. Banks, Derry.
Dr. D. M. Easter, Youngwood.
Dr. W. K. T. Sahm, Pittsburgh.
Dr. W. G. McKinney, Pitcairn.
Dr. I. H. Boyd, Oil City.
*Dr. J. B. Grier, Olean, N. Y.
*Dr. A. R. Johnson, Buffalo, N. Y.
Dr. H. E. Westhaeffer, Elrama.

*District extends into Pennsylvania.

PHILADELPHIA AND READING RAILWAY COMPANY.

Dr. Casper Morris, Chief Medical Examiner, Philadelphia.

Dr. Frederick E. Brister, New Britain.
Dr. Francis S. Ferris, Philadelphia.
Dr. Norris S. McDowell, Philadelphia.
Dr. Charles F. Detweiler, Reading.
Dr. J. Henry Orff, Reading.
Dr. Thomas F. Heebner, Port Carbon.
Dr. Albert E. Bronson, Girardville.
Dr. Harry E. Klase, Harrisburg.

THE BALTIMORE AND OHIO RAILROAD COMPANY.

Dr. J. F. Tearney, Chief Medical Examiner, Baltimore, Md.

Dr. E. V. Milholland, Assistant to Chief Medical Examiner, Baltimore, Md.

Dr. C. W. Pence, Philadelphia.
Dr. F. H. D. Biser, Rockwood.
Dr. M. H. Koehler, Connellsville.
Dr. J. Gilbert Selby, Rockwood.
Dr. W. U. Charlton, New Castle Junc'n.
Dr. H. H. McIntire, Connellsville.
Dr. J. P. Laylor, Pittsburgh.
Dr. R. J. Gasslein, Pittsburgh.
Dr. Glen G. Edwards, Hazlewood.
Dr. John H. Hodges, New Castle Junc'n.

TOWNSHIP HEALTH OFFICERS.

‡Deceased. *Retired. †New appointment.

Health Officer.	Residence.	County.
J. J. Kohl,	Orrtanna,	Adams.
Charles Adelsperger,	Aspers, R. D. No. 2,	Adams.
John H. Delp,	York Springs, R. D. No. 1,	Adams.
H. V. Rahn,	Abbottstown,	Adams.
T. O. Gouker,	Littlestown,	Adams.
J. H. Pecher,	Fairfield,	Adams.
Daniel Mummert,	East Berlin,	Adams.
J. Chester Bell,	Gettysburg,	Adams.
J. B. Bailie,†	Hites,	Allegheny.
William H. Fischer,	Sharpsburg,	Allegheny.
William J. McLaughlin,	Unity Station,	Allegheny.
Ralph T. Pittock,	Pittsburgh,	Allegheny.
J. H. Rath,	Gallatin,	Allegheny.
W. P. Andre,	Elizabeth, R. D.,	Allegheny.
J. M. Edmundson,	McKees Rocks, R. D. No. 1,	Allegheny.
J. R. McMichael,	Oakdale,	Allegheny.
John G. Yolton,	Cliff Mines,	Allegheny.
M. C. Schubert,	McKees Rocks,	Allegheny.
C. M. Timblin,	Bridgeville,	Allegheny.
J. H. D. Gray,	Sewickley, R. D. No. 2,	Allegheny.
J. C. Dunn*	Tarentum,	Allegheny.
George W. Bell,	Harmarville, R. D. No. 1,	Allegheny.
G. C. Magill,	Tarentum, R. D. No. 2,	Allegheny.
George Fisher,	Gibsonia,	Allegheny.
C. H. Kretzer,	Allison Park,	Allegheny.
F. L. Fonger,	Pittsburgh, R. D. No. 5,	Allegheny.
George W. Bush,	Turtle Creek,	Allegheny.
William Fischer,	Broughton,	Allegheny.
J. F. Sigart,*	Kittanning,	Armstrong.
Will A. Wray,	Spring Church,	Armstrong.
J. C. Moore,	Rural Valley,	Armstrong.
Frank Sanders,	New Bethlehem, R. D. No. 4 Clarion Co.	Armstrong.
W. A. Jack,	Kittanning, R. D.,	Armstrong.
S. H. McNaughton,	Parkers Landing,	Armstrong.
J. A. Foreman,	Dayton,	Armstrong.
W. H. Eynon,	Kaylor,	Armstrong.
W. E. Paine,	Tidal,	Armstrong.
D. E. Wolf,	Kelly Station,	Armstrong.
C. E. Kinnard.	Cochran Mills,	Armstrong.
William M. Lance,	Murdocksville (Washington Co.),	Beaver.
I. H. Laird,	New Sheffield,	Beaver.
Albert Marx.	Industry,	Beaver.
Hiram McKee,	Beaver Falls,	Beaver.
J. Lewis,	New Brighton,	Beaver.
W. Scott Shaffer,	Ambridge,	Beaver.
Stephen Nicely,†	Darlington,	Beaver.

Township Health Officers—Continued.

Health Officer.	Residence.	County.
Dr. E. L. Smith,	Schellsburg,	Bedford.
W. A. McGregor,	Alum Bank,	Bedford.
Charles Wolf,	Ossna, R. D. No. 1,	Bedford.
C. W. Bulger,	Woodbury,	Bedford.
J. J. Lowery,*	Hyndman,	Bedford.
C. Guy Blymyer,*	Bedford,	Bedford.
Thomas Staily,	Everett,	Bedford.
N. C. Mearkle,	Clearville,	Bedford.
James L. Tenley,	Defiance,	Bedford.
Lloyd H. Albright,†	Hyndman,	Bedford.
George Herring,	Fleetwood,	Berks.
Daniel K. Hoch,	Kutztown, R. D. No. 2,	Berks.
J. E. Moyer,	Geigers Mills,	Berks.
Morris Schaeffer,	Shillington,	Berks.
Dr. W. H. Seitzinger,	Wernersville,	Berks.
A. L. Kleinginna,	West Leesport, R. D. No. 1,	Berks.
W. H. Lutz,	Bernville,	Berks.
John D. Moll,	Bernville,	Berks.
Franklin Deitzler,	Mt. Aetna,	Berks.
Morris A. Ernst,	Shoemakersville,	Berks.
D. J. Fraunfelder,	Lenhartsville,	Berks.
J. I. Henne,	Leesport,	Berks.
Morris Spatz,	Jacksonwald,	Berks.
John K. Ludwig,	Centerport,	Berks.
Dr. Daniel McLean,	Douglassville, R. D. No. 4,	Berks.
W. S. Stengel,	Bally,	Berks.
J. W. Schwartz,	Mertztown,	Berks.
M. F. Brownlee,	Tyrone,	Blair.
Frank Garland,	Bellwood,	Blair.
T. G. Herbert,	Altoona,	Blair.
J. Frank Mentzer,	Frankstown,	Blair.
Samuel A. Keller,	Duncansville,	Blair.
William Ickes,*	Roaring Spring,	Blair.
Joseph Crissman,	Martinsburg,	Blair.
J. R. Lytle,	Williamsburg,	Blair.
E. G. Carper,†	Roaring Spring,	Blair.
Fred J. Sterling,†	Canton,	Bradford.
Daniel Chase,	Gillett,	Bradford.
F. O. Lantz,	Powell,	Bradford.
Delanson Fenner,	Towanda,	Bradford.
Henry Forbes,	Sheshequin,	Bradford.
W. E. Lewis,	Wyalusing,	Bradford.
F. M. Hicks,	Rome,	Bradford.
T. Jefferson Waters,	Towanda, No. 76,	Bradford.
F. H. Woolsey,	New Albany,	Bradford.
Curtis B. Tyrrell,	Athens,	Bradford.
F. B. Mayer,*	Canton,	Bradford.
Fay L. Rose,	LeRaysville,	Bradford.
Cyrus Nagel,	Quakertown,	Bucks.
F. P. Reiter,	Quakertown, R. D. No. 4,	Bucks.
Thomas H. Biehn,	Perkasie,	Bucks.
Dr. A. F. Myers,	Blooming Glen,	Bucks.
C. D. Barrett,	Doylestown,	Bucks.
Dr. Francis G. Cope,	Upper Black Eddy,	Bucks.
George Milnor,*	New Hope,	Bucks.
Henry C. Lovett,	Emilie,	Bucks.
F. B. Wist,	Yardley,	Bucks.
Irvin L. Carr,	Ivyland,	Bucks.
B. F. Ridge,	Langhorne,	Bucks.
J. H. Pizor,	Harrisville,	Butler.
H. O. Hindman,	Slippery Rock,	Butler.
J. E. Womer,	Parkers Landing (Armstrong Co.),	Butler.
J. F. Harper,	North Washington,	Butler.
Joseph Criswell,*	Lyndora,	Butler.
W. D. Hoffman,	Saxonburg,	Butler.
F. B. Magee,	Harrisville,	Butler.
Dr. George H. Mathiott,	Mars,	Butler.
D. D. W. Fiedler,	Harmony,	Butler.
Harry Heberling,	Portersville,	Butler.
Harry L. Kelly,†	Butler,	Butler.
W. D. Longwell,†*	Karns City,	Butler.
Mahlon J. Berkebile,	Johnstown,	Cambria.
Paul Ferguson,	Gallitzin,	Cambria.

Township Health Officers—Continued.

Health Officer.	Residence.	County.
P. E. Hollen,	Fallentimber,	Cambria.
Ellsworth Rowland,	Nanty Glo,	Cambria.
Frank D. Hellman,	South Fork, R. D. No. 1,	Cambria.
J. W. Fouch,	Salix,	Cambria.
Dr. J. A. Lynch,	Cresson,	Cambria.
Samuel Thomas,†	St. Boniface,	Cambria.
John B. Mayers,	Portage,	Cambria.
D. L. Owens,*	Ebensburg,	Cambria.
W. C. Perry,	Chest Springs,	Cambria.
Robert Cowan,	St. Benedict,	Cambria.
Dr. E. T. Ealy,*	Barnesboro,	Cambria.
Dr. S. W. Worrell,*	Patton,	Cambria.
John Kline,	Nicktown,	Cambria.
John A. Gray,†	Ebensburg,	Cambria.
H. B. Muttersbough,	Driftwood,	Cameron.
R. R. McQuay,	Emporium,	Cameron.
P. J. Dougherty,	Palmerton,	Carbon.
A. T. Koch,	Weissport,	Carbon.
J. F. Cole,	Beaver Meadows,	Carbon.
C. J. Kistler,	Weatherly,	Carbon.
W. M. Kleckner,	East Mauch Chunk,	Carbon.
C. H. Hoffman,	White Haven (Luzerne Co.),	Carbon.
Daniel Thomas,	East Mauch Chunk,	Carbon.
H. R. Kreidler,	Lehighton,	Carbon.
S. M. Sankey,	Philipsburg,	Centre.
S. R. Pringle,	Port Matilda,	Centre.
W. D. Port,	Pine Grove Mills,	Centre.
G. M. Cooney,	Center Hall, R. D. No. 1,	Centre.
J. S. Weaver,	Aaronsburg,	Centre.
Homer Carr,*	Milesburg,	Centre.
Dr. W. J. Kurtz,	Howard,	Centre.
W. A. Sickel,	Snow Shoe,	Centre.
Irvin J. Dreese,	Lemont,	Centre.
J. F. Eisenhauer,†	Howard, R. D. No. 3,	Centre.
C. R. McMichael,	East Downingtown,	Chester.
Elmer Hiestand,	Spring City, R. D.,	Chester.
Warren Latshaw,*	Anselma,	Chester.
Lewis Miller,	Berwyn,	Chester.
William D. Garrett,	West Chester, R. D. No. 2,	Chester.
S. H. Wickersham,*	Unionville,	Chester.
William Evans,	Westgrove,	Chester.
Dr. D. A. Stubbs,	Oxford,	Chester.
W. H. Townsend,	Lincoln University,	Chester.
William Hurley,	Parkesburg,	Chester.
T. E. Windle,	Coatesville,	Chester.
J. H. Essick,	St. Peters, R. D. No. 3,	Chester.
F. L. Talbot,	St. Peters,	Chester.
Lewis D. Brooks,†	Unionville,	Chester.
Charles A. Broome,†	Chester Springs,	Chester.
C. S. Pyle,	Toughkenamon,	Chester.
E. P. Hershey,	West Chester,	Chester.
Frank McGlathery,	Valley Forge,	Chester.
A. N. Wright,†	Knox,	Clarion.
J. B. Fescemeyer,	Fryburg,	Clarion.
Solomon Rugh,	Lamartine,	Clarion.
R. J. Sigworth,*	Leeper,	Clarion.
Dr. N. M. Meals,*	Callensburg,	Clarion.
Dr. S. A. Brown,	Foxburg,	Clarion.
E. W. Kiser,	Shippensville,	Clarion.
Thomas McLaughlin,	Lucinda,	Clarion.
A. M. Callihan,	Helen Furnace,	Clarion.
M. C. Elder,	Corsica, R. D. No. 1 (Jefferson Co.)	Clarion.
Dr. G. B. Woods,	Curllsville,	Clarion.
J. O. Lindquist,	Fairmount City,	Clarion.
F. C. McEwen,*	Sligo,	Clarion.
A. J. Rimer,	Rimersburg, R. D. No. 1,	Clarion.
C. C. Mock,	Philipston,	Clarion.
F. C. Corbett,	New Bethlehem,	Clarion.
E. O. Lerch,†	Sligo,	Clarion.
John A. Walter,†	Tylerstown,	Clarion.
Robert R. Funk,	Munson,	Clearfield.
Max E. Prowell,	Burnside,	Clearfield.

Township Health Officers—Continued.

Health Officer.	Residence.	County.
Dr. H. A. Woodside,*	Lumber City,	Clearfield.
Dr. R. R. Jordan,	DuBois,	Clearfield.
Dr. J. H. Kline,	Penfield,	Clearfield.
M. L. McQuown,	Clearfield,	Clearfield.
P. C. Gates,	Coalport,	Clearfield.
W. P. Harpster,	Houtzdale,	Clearfield.
W. P. Tate,*	Curwensville,	Clearfield.
F. R. Sparling,	Osceola Mills,	Clearfield.
H. G. Jones,*	Kylertown,	Clearfield.
E. L. Roussey,	Frenchville,	Clearfield.
James M. Orr,	Mahaffey,	Clearfield.
D. D. Miller,†*	Grampian,	Clearfield.
Eli Hile,†	Lumber City,	Clearfield.
W. Walter Jones,†	Kylertown,	Clearfield.
Charles S. Shoff,†	Madera,	Clearfield.
D. Scott Currin,	Loganton,	Clinton.
J. D. Stoughton,†	Lock Haven,	Clinton.
I. T. Hunter,	Mill Hall,	Clinton.
R. C. Sebring,*	Lock Haven,	Clinton.
Lewis Pfoutz,	Renovo,	Clinton.
Houston Weidler,	Rauchtown,	Clinton.
William S. Boyer,†	Lock Haven,	Clinton.
F. C. Henry,†	Avis,	Clinton.
John W. Dahl,†	Castanea,	Clinton.
C. L. Hirleman,	Benton,	Columbia.
Dr. J. W. Mather,*	Berwick,	Columbia.
George P. Ringler,	Bloomsburg,	Columbia.
John A. Breisch,	Mainville,	Columbia.
Peter McHale,	Centralia,	Columbia.
Martin Billig,	Numidia,	Columbia.
Charles Brumstetler,	Millville,	Columbia.
Harry A. Harman,	Catawissa,	Columbia.
F. H. Ringrose,†	Briar Creek,	Columbia.
H. P. Marley,	Cochranton,	Crawford.
George Wade,*	Hartstown,	Crawford.
Dr. S. F. Hazen,	Atlantic,	Crawford.
J. Taylor Hemphill,	Titusville,	Crawford.
A. L. Squier,	Townsville,	Crawford.
W. L. Reed,	Spartansburg,	Crawford.
Wilbur H. King,	Lincolnville,	Crawford.
J. A. Webster,	Saegerstown, No. 17,	Crawford.
Dr. H. L. Brush,	Conneaut Lake,	Crawford.
Harry A. Campfield,	Meadville,	Crawford.
W. H. Campfield,	Guys Mills,	Crawford.
W. A. Rupert,*	Conneautville,	Crawford.
S. L. Bennett,	Cambridge Springs,	Crawford.
Forest I. Drake,	Blooming Valley,	Crawford.
C. C. Munger,	Center Road Station,	Crawford.
Hayden Peterson,	Atlantic,	Crawford.
D. B. Russell,	Shippensburg,	Cumberland.
I. J. Weaver,†	Mechanicsburg,	Cumberland.
A. W. Yeats,	Carlisle,	Cumberland.
M. A. Embick,	Carlisle,	Cumberland.
T. A. Carothers,	Carlisle, R. D.,	Cumberland.
B. Frank Hutton,	Newville,	Cumberland.
W. C. Creamer,	Shippensburg, R. D.,	Cumberland.
A. R. Zook,	Mechanicsburg, R. D. No. 2,	Cumberland.
C. D. Waldron,	Halifax,	Dauphin.
J. A. Kambell,*	Berrysburg,	Dauphin.
Daniel F. Coleman,	Gratz,	Dauphin.
E. F. Steever,	Wiconisco,	Dauphin.
Thomas G. Lentz,	Elizabethville,	Dauphin.
R. M. Steckley,	Dauphin,	Dauphin.
A. B. Croll,	Middletown,	Dauphin.
G. S. Hetrick,	Penbrook, R. D. No. 2,	Dauphin.
John Allwine,	Hershey,	Dauphin.
J. A. Miller,†	Elizabethville,	Dauphin.
Thomas McComb,	Chester,	Delaware.
W. A. Moorhead,	Rutledge,	Delaware.
F. I. Taylor,	Media,	Delaware.
Lewis P. Cox,	Boothwyn, R. D. No. 2,	Delaware.

Township Health Officers—Continued.

Health Officer.	Residence.	County.
Ernest Fuhrer,†*	Ridgway,	Elk.
D. A. Sheely,	Carlo,	Elk.
Joseph F. Metts,	Hallton,	Elk.
George Younger, Sr.,	Johnsonburg,	Elk.
A. S. Gulnac,*	Ridgway,	Elk.
A. S. Horton,	Brockport,	Elk.
E. H. Morey,	Benezette,	Elk.
Anthony Samick,†	St. Marys,	Elk.
John Simon,†	Ridgway, No. 36,	Elk.
Henry McCray,	Corry, R. D. No. 3,	Erie.
C. E. Fish,	Waterford,	Erie.
E. L. Dunn,	McKean,	Erie.
Thomas Hurst,	Albion,	Erie.
A. H. Nason,	North Girard,	Erie.
J. E. Burton,	Buffalo Road, Erie,	Erie.
Lewis Ward,	North East, R. D. No. 4,	Erie.
Karl Van Tussel,	Union City,	Erie.
Casper Haut,	Star Junction,	Fayette.
S. B. Steepey,	Fayette City,	Fayette.
W. L. Townsend,	Grindstone,	Fayette.
Frank Costelo,	Guyaux,	Fayette.
A. M. Provance,	Hopwood,	Fayette.
Allen Hyatt,	Connellsville,	Fayette.
Arthur C. Dunn,	Vanderbilt,	Fayette.
N. E. Hall,	Normalville,	Fayette.
W. G. Corristan,	Ohiopyle,	Fayette.
Joseph H. Humberston,	Humberston,	Fayette.
J. G. Hager,	Farmington,	Fayette.
John W. Hostetler,	McClellandtown,	Fayette.
R. L. Haslet,	Tionesta,	Forest.
James I. Woods,	Marienville,	Forest.
H. F. Hummelbaugh,	Mercersburg,	Franklin.
C. Fred Fletcher,	Greencastle,	Franklin.
Percy H. Snowberger,	Waynesboro,	Franklin.
W. E. Finney,	Chambersburg,	Franklin.
W. H. Markey,	Fannettsburg,	Franklin.
W. I. Shearer,	Orrstown,	Franklin.
C. E. Seville,	McConnellsburg,	Fulton.
Harry L. Peck,	Needmore,	Fulton.
J. V. Deaver,	Hiram,	Fulton.
M. E. Barton,	Crystal Spring,	Fulton.
Jacob R. Davis,*	Waynesburg,	Greene.
J. A. Virgin,	Clarksville,	Greene.
Dr. G. W. Hatfield,*	Mt. Morris,	Greene.
Dr. Charles Spragg,*	Waynesburg,	Greene.
John L. Rice,	New Freeport,	Greene.
J. S. Johnson,	Wind Ridge,	Greene.
Jones Stevenson,	Greensboro,	Greene.
J. E. Baily,	Carmichaels,	Greene.
John L. Blaker,†	Mt. Morris,	Greene.
E. F. Gould,	Dudley,	Huntingdon.
Harvey A. Wible,	Selea,	Huntingdon.
W. T. Bair,	Shade Gap,	Huntingdon.
J. M. Lutz,	Shirleysburg,	Huntingdon.
R. P. Smith,†	Mapleton,	Huntingdon.
Dr. J. G. Spangler,	Mapleton,	Huntingdon.
D. B. Querry,	Entriken,	Huntingdon.
A. P. McElwain,	Huntingdon, R. D.,	Huntingdon.
I. C. Temple,	Petersburg,	Huntingdon.
J. E. Irvin,	McAlevys Fort,	Huntingdon.
H. R. Householder,	Grafton, R. D.,	Huntingdon.
D. J. Kyle,	Charter Oak,	Huntingdon.
J. R. Lehman,*	Warriors Mark,	Huntingdon.
A. W. Hyskell,†	Warriors Mark,	Huntingdon.
George D. Lynn,†	Mapleton Depot, R. D. No. 1,	Huntingdon.
Adam Black,	Smicksburg,	Indiana.
W. S. Brown,	Marion Center,	Indiana.
Henry Barkey,	Glen Campbell,	Indiana.
Dr. J. H. Peterman,	Cherrytree,	Indiana.
James Kinter,	Shelocta,	Indiana.
Dr. W. L. Shields,	Kent,	Indiana.

Township Health Officers—Continued.

Health Officer.	Residence.	County.
Calvin Miller,	Saltsburg, R. D. No. 1,	Indiana.
J. B. Eck,†	Hellwood,	Indiana.
H. T. Ross,†	Brush Valley,	Indiana.
Dr. E. M. Bushnell,	Black Lick,	Indiana.
Frank C. Amond,	Clymer,	Indiana.
S. L. Alexander,	New Florence,	Indiana.
C. L. McCurdy,	Creekside,	Indiana.
W. C. Cunningham,‡	Brush Valley,	Indiana.
C. R. Masters,	Rossiter,	Indiana.
R. G. Spence,	Homer City,	Indiana.
W. N. Timblin,	Indiana,	Indiana.
R. N. Calhoun,	Big Run, R. D. No. 2,	Jefferson.
M. I. Kunselman,	Coolspring,	Jefferson.
Alfred Frampton,	Punxsutawney,	Jefferson.
Samuel Shilling,	Ringgold,	Jefferson.
James W. Kyle,	Corsica,	Jefferson.
Dr. J. G. Steiner,	Knoxdale,	Jefferson.
I. B. McLaughlin,	Summerville,	Jefferson.
G. W. Nelson,	Brockwayville,	Jefferson.
F. H. Schaffner,	Richardsville,	Jefferson.
Frank Murray,	Reynoldsville,	Jefferson.
J. S. McNeil,	Sigel,	Jefferson.
J. S. Harley,	Thompsontown,	Juniata.
O. C. Diffenderfer,	Mifflintown,	Juniata.
J. P. Calhoun,	Mifflin,	Juniata.
D. G. Alter,	Port Royal,	Juniata.
H. W. Musser,*	East Waterford,	Juniata.
Joshua B. Buchanan,*	Blacklog,	Juniata.
William J. Campbell,†	Honey Grove,	Juniata.
George W. Smith,†	Blacklog,	Juniata.
W. H. Hinebaugh,†*	East Waterford,	Juniata.
J. F. Lacoe,*	Ransom,	Lackawanna.
T. E. Schilling,	Clark's Summit,	Lackawanna.
M. E. Gallagher,	Carbondale,	Lackawanna.
Dr. G. Philip Saxer,*	Fleetville,	Lackawanna.
Henry C. Hoffman,	Wimmers, R. D. No. 1,	Lackawanna.
Eugene Noack,	Moscow,	Lackawanna.
James McCarty,	Gouldsboro,	Lackawanna.
B. P. Franklin,†	Olyphant,	Lackawanna.
Jacob D. Weigand,*	Elizabethtown,	Lancaster.
H. B. Slack,	Intercourse,	Lancaster.
J. H. Deen,	Lancasetr,	Lancaster.
Charles H. Kreider,	Conestoga,	Lancaster.
B. H. Pownall,	Christiana,	Lancaster.
Adam Stumpf,†	Elizabethtown,	Lancaster.
Dr. W. S. Tinney,	Strasburg,	Lancaster.
Heber M. James,	Quarryville,	Lancaster.
S. C. Groff,	Quarryville, R. D. No. 1,	Lancaster.
Wakeman Wesley,	Nottingham, R. D. No. 1 (Chester Co.)	Lancaster.
Dr. R. S. Schweitzer,	Adamstown,	Lancaster.
H. B. Clepper,	Columbia,	Lancaster.
Jere Mumma,	Brownstown,	Lancaster.
George D. C. Danner,	Manheim,	Lancaster.
H. W. Gier,	Ephrata,	Lancaster.
Henry C. Windolph,	Marietta,	Lancaster.
F. D. Allen,	Wampum, R. D. No. 1,	Lawrence.
Andrew Glasser,	Ellwood City,	Lawrence.
J. A. Magee,	Volant, R. D. No. 2,	Lawrence.
Mehard Neal,	New Wilmington,	Lawrence.
Harry L. Torrance,	Pulaski,	Lawrence.
E. N. Houk,*	New Castle, R. D. No. 1,	Lawrence.
S. W. Wilson,	New Galilee, R. D. No. 3,	Lawrence.
A. S. Moore,	New Castle,	Lawrence.
J. C. Bright,	New Castle, R. D. No. 8,	Lawrence.
L. H. Hawthorne,	New Castle, 52 Valley Way,	Lawrence.
Solomon Aiken,†	Wampum,	Lawrence.
John Walter,	Annville,	Lebanon.
William H. Hinterleiter,	Jonestown,	Lebanon.
Wesley G. Emerich,	Myerstown,	Lebanon.
Robert A. Brandt,	Lebanon,	Lebanon.
Jacob J. Snyder,	Palmyra,	Lebanon

Township Health Officers—Continued.

Health Officer.	Residence.	County.
Samuel A. Sowden,	Slatedale,	Lehigh.
Worden F. Fritzinger,	New Tripoli,	Lehigh.
B. F. Sell,	East Texas,	Lehigh.
E. G. Erney,	Limeport,	Lehigh.
John F. L. Shiffert,	Old Zionsville,	Lehigh.
Harrison P. Sterner,	Allentown,	Lehigh.
James F. Bachman,†	Schnecksville,	Lehigh.
J. H. Seybert,	West Nanticoke,	Luzerne.
G. B. Shonk,	Plymouth,	Luzerne.
R. H. Smith,	Sybertsville,	Luzerne.
Paul G. Frey,	Nescopeck,	Luzerne.
M. F. Whitebread,	Nescopeck, R. D. No. 1,	Luzerne.
James Collins,	Hazleton,	Luzerne.
W. L. Richards,	Drums,	Luzerne.
H. F. Good,	Wapwallopen,	Luzerne.
Adam Knies,	Mountain Top, R. D. No. 1,	Luzerne.
W. R. Wiant,	Shickshinny, R. D. No. 2,	Luzerne.
Thomas A. McCormack,	Plains,	Luzerne.
John McLean,	Pittston,	Luzerne.
Dr. P. F. Hubler,	Pittston,	Luzerne.
D. E. Thomas,	Luzerne,	Luzerne.
Charles D. Huff,	Idetown, R. D.,	Luzerne.
John Boyer,	Tivoli,	Lycoming.
Roy G. Lauer,	Muncy,	Lycoming.
Dr. J. L. Mansuy,	Ralston,	Lycoming.
Thomas F. Connelly,	Trout Run,	Lycoming.
C. B. Seely,	Jersey Shore,	Lycoming.
Harry Harman,	Montgomery,	Lycoming.
G. O. Gray,	Hughesville,	Lycoming.
Henry Coder,	Montoursville,	Lycoming.
Dr. Charles W. Youngman,	Williamsport,	Lycoming.
M. E. Wescott,*	Slate Run,	Lycoming.
W. H. McInroy,†	Slate Run,	Lycoming.
C. M. Benson,	Colegrove,	McKean.
William Roedel,	Bradford,	McKean.
William A. Connely,	Ludlow,	McKean.
Fred Falkinburg,	Mt. Jewett,	McKean.
C. W. Bishop,	Port Allegany,	McKean.
Dr. W. A. Ostrander,	Smethport,	McKean.
W. A. Harler,	Eldred,	McKean.
J. R. Davidson,	Grove City,	Mercer.
H. E. Moats,	Jamestown, R. D. No. 42,	Mercer.
G. B. Nevin,*	Greenville,	Mercer.
R. I. Campbell,	Kennard, R. D.,	Mercer.
R. D. Kerr,	Sandy Lake, R. D. No. 25,	Mercer.
R. A. Fowler,	Sandy Lake, R. D. No. 23,	Mercer.
Paul L. Moore,	Sandy Lake,	Mercer.
J. H. McCurdy,	Jackson Centre, R. D. No. 18,	Mercer.
V. B. Knapp,	Fredonia, R. D. No. 37,	Mercer.
Samuel Kerr,	Sharon,	Mercer.
W. J. Porter,	Pulaski (Lawrence Co.),	Mercer.
John L. Bell,	Transfer,	Mercer.
R. W. Fruit,	Mercer,	Mercer.
L. D. Miles,†	Greenville,	Mercer.
George W. McElhone,	Newton Hamilton,	Mifflin.
William J. Burns,	Reedsville,	Mifflin.
S. B. Kiner,	McVeytown,	Mifflin.
Elmer E. Mink,*	Burnham,	Mifflin.
W. F. Bigelow,	Belleville,	Mifflin.
A. R. Ruble,†	Lewistown,	Mifflin.
A. H. Schoonover,	Stroudsburg,	Monroe.
Allen Shupp,	Gilbert,	Monroe.
B. H. Randall,*	Mount Pocono,	Monroe.
H. L. Warner,†	Mount Pocono,	Monroe.
Romanus H. Alderfer,	Telford,	Montgomery.
Willis D. Bare,	Bridgeport,	Montgomery.
Arthur R. Hayden,	Ambler,	Montgomery.
Thomas A. Smith,*	Red Hill,	Montgomery.
J. W. S. Gross,*	Trappe,	Montgomery.
Carl G. Lorenz,	Plymouth Meeting,	Montgomery.
W. R. Walton,	Willow Grove,	Montgomery.
C. E. White,	Norristown,	Montgomery.

Township Health Officers—Continued.

Health Officer.	Residence.	County.
Edwin J. Kuhns,	Lansdale,	Montgomery.
Clymer Missimer,	Pottstown,	Montgomery.
A. B. Barnhardt,	Green Lane,	Montgomery.
W. F. Bertolet,†	Trappe,	Montgomery.
John A. Snyder,†	Green Lane,	Montgomery.
J. P. Patton,	Danville,	Montour.
A. A. Switzer,	Washingtonville,	Montour.
W. C. Robbins,	Pottsgrove, (Northumberland Co.),	Montour.
F. P. Wirebach,	Portland,	Northampton.
William E. Kemmerer,‡	Easton,	Northampton.
Charles S. Kichlein,	Easton, R. D. No. 6,	Northampton.
Hiram U. Laubach,	Bethlehem,	Northampton.
L. W. Siegfried,	Bath,	Northampton.
Christian Mann,	Bangor,	Northampton.
Frank Wunderly,	Nazareth,	Northampton.
William A. Lynn,	South Bethlehem,	Northampton.
R. B. Bird,	Riverside,	Northumberland.
Stanley Ryan,	Northumberland,	Northumberland.
Harry C. Fasold,	Sunbury,	Northumberland.
Joseph R. Lynn,	Elysburg,	Northumberland.
Thomas Noble,	Mt. Carmel,	Northumberland.
F. S. Fenstermacher,	Dalmatia,	Northumberland.
Roscoe Blain,	Turbotville,	Northumberland.
Thomas L. Mort,	Trevorton,	Northumberland.
Ralph B. Kell,	Blain,	Perry.
Jacob Morrison,	Landisburg,	Perry.
Roscoe Snyder,	Liverpool,	Perry.
S. S. Orris,	Duncannon,	Perry.
A. W. Orwan,	Newport, R. D. No. 2,	Perry.
W. E. Meck,	New Buffalo,	Perry.
W. C. Moore,	Millerstown,	Perry.
Jacob Coble,	Newport,	Perry.
Dr. J. D. Baker,‡	Echol,	Perry.
Amos M. Keller,	Marysville, R. D. No. 1,	Perry.
G. W. Wallett,†	Ickesburg,	Perry.
F. C. Wood,	Milford,	Pike.
C. A. Pellett,	Paupac,	Pike.
Isaac Anrduss,	Dingmans Ferry,	Pike.
Henry Dewitt,	Rowlands,	Pike.
E. L. Caldwell,†*	Cross Fork,	Potter.
John T. Sinon,	Austin,	Potter.
C. A. Terhune,*	Ulysses,	Potter.
Dr. J. A. Woodard,	Shinglehouse,	Potter.
F. E. Dinehart,	Coudersport,	Potter.
C. H. Francis,	Galeton,	Potter.
E. C. Spencer,*	Ulysses,	Potter.
Wilson Russell,*	Cross Fork,	Potter.
L. P. Fessenden,*	Roulette,	Potter.
W. L. Mastin,†	Ulysses,	Potter.
A. L. Corwin,†	Roulette,	Potter.
Thomas Devlin,‡	Cumbola,	Schuylkill.
S. H. Fetter,	Pitman, R. D. No. 2,	Schuylkill.
F. L. Brown,	Auburn,	Schuylkill.
Emanuel Kauffman,	Orwigsburg,	Schuylkill.
L. B. Schock,	Tamaqua,	Schuylkill.
E. F. Hamsher,	Barnesville,	Schuylkill.
Joseph Bruno,	Kelayres,	Schuylkill.
Frank Wharmby,	Nuremberg,	Schuylkill.
James H. Seymour,	Mahanoy City,	Schuylkill.
Thomas H. May,	Shaft,	Schuylkill.
J. J. Conner,	Ashland,	Schuylkill.
Richard Jones,	Minersville,	Schuylkill.
G. i. Derr,	Tremont,	Schuylkill.
Timothy Brennan,	Heeseherville,	Schuylkill.
Ira I. Erdman,	Klingerstown,	Schuylkill.
George F. Knittle,	New Ringgold,	Schuylkill.
John Sutton,	Pine Grove,	Schuylkill.
Michael J. Kassander,	Tamaqua,	Schuylkill.
G. W. Baum,†	Sacramento,	Schuylkill.
P. J. Devlin,†	Cumbola,	Schuylkill.
Luther Hawk,†	Tower City,	Schuylkill.
H. J. Updegrave,†*	Tower City,	Schuylkill.

Township Health Officers—Continued.

Health Officer.	Residence.	County.
S. F. Aurand,	Beaver Springs,	Snyder.
F. B. Ulrich,*	Selinsgrove,	Snyder.
Irwin Boyer,	Mt. Pleasant Mills,	Snyder.
I. M. Romig,†	Selinsgrove,	Snyder.
E. K. Hochstetler,	Sand Patch,	Somerset.
Orville Fike,	Confluence,	Somerset.
H. L. Martz,	Barronvale,	Somerset.
Charles L. Eagle,	Rockwood,	Somerset.
H. F. Fogle,	Elk Lick,	Somerset.
William Long,	Wellersburg,	Somerset.
M. O. Barkley,	Fairhope, R. D. No. 1,	Somerset.
J. H. Hentz,	Berlin,	Somerset.
Calvin Fulton,	Stoystown,	Somerset.
W. M. Gohn,	Boswell, R. D. No. 2,	Somerset.
Herman F. Swank,	Somerset, R. D. No. 6,	Somerset.
Dr. H. A. Zimmerman,	Hollsopple,	Somerset.
N. P. Maust,†	Meyersdale, R. D. No. 1,	Somerset.
J. H. Spence,‡	Bernice,	Sullivan.
George Brown,	Lopez,	Sullivan.
F. W. Buck,	Muncy Valley,	Sullivan.
J. E. Bird,	Dushore, R. D. No. 3,	Sullivan.
William N. Harrison,	Hillsgrove,	Sullivan.
J. L. Miller,	Lopez,	Sullivan.
Frank E. Boyden,†	Susquehanna,	Susquehanna.
C. L. Tyler,	New Milford,	Susquehanna.
H. C. Foran,	Friendsville, R. D. No. 2,	Susquehanna.
Dr. A. S. Blair,	Hallstead,	Susquehanna.
L. B. Whitney,	Thompson,	Susquehanna.
T. B. Dimmick,	Uniondale,	Susquehanna.
J. W. Jones,	Forest City,	Susquehanna.
H. A. Robbins,*	Harford,	Susquehanna.
H. S. Conklin,*	Montrose,	Susquehanna.
F. S. Greenwood,	Lynn,	Susquehanna.
Alfred Perigo,†	Montrose,	Susquehanna.
Nathan Niles,	Mansfield,	Tioga.
J. A. Vandergrift,	Wellsboro, R. D. No. 1,	Tioga.
L. G. Austin,	Ogdensburg,	Tioga.
R. G. Heyler,	Liberty,	Tioga.
F. J. Everitt,	Jackson Summit,	Tioga.
John H. Duff,	Arnot,	Tioga.
E. C. Howell,	Wellsboro, R. D.,	Tioga.
Harry Orr,	Wellsboro, R. D. No. 2,	Tioga.
W. G. Sears,*	Gaines,	Tioga.
F. W. Clark,	Mansfield,	Tioga.
William Bennett,	Elkland,	Tioga.
Dr. E. E. Clark,	Knoxville,	Tioga.
G. H. Simmons,	Westfield,	Tioga.
A. Lee Kemp,	Nelson,	Tioga.
Dr. C. S. Jacquemin,	Lewisburg,	Union.
J. A. Spigelmyer,*	Millmont, R. D. No. 1,	Union.
James L. Sanders,	Mifflinburg,	Union.
J. R. McCurley,	Allenwood,	Union.
J. S. McCreight,	Lewisburg,	Union.
A. J. Morrow,	Pittsville,	Venango.
Roy Pimpton,	Seneca,	Venango.
G. W. Dille,	Cooperstown,	Venango.
L. E. Grove,	Franklin,	Venango.
A. E. Singleton,	Utica, R. D. No. 2,	Venango.
Dr. C. P. Snyder,	Polk,	Venango.
J. A. Riddle,	Grove City, R. D. No. 14,	Venango.
J. H. Crawford,*	Emlenton,	Venango.
E. D. House,	Pleasantville,	Venango.
Orlo E. Hoop,	Cornplanter,	Warren.
N. R. McGuire,	Columbus,	Warren.
L. G. Henry,	Tidioute,	Warren.
John Spencer,	Chandlers Valley,	Warren.
H. J. Bierce,*	Warren,	Warren.
Henry Howard,	Clarendon,	Warren.
William H. Maultby,	Grand Valley,	Warren.
Roy H. McDowell,	Youngsville,	Warren.
R. N. Brown,†	Warren,	Warren.

Township Health Officers—Continued.

Health Officer.	Residence.	County.
W. G. Neuse,	Washington,	Washington.
A. L. McConnell,	Florence,	Washington.
Dr. A. L. Runion,	Canonsburg,	Washington.
J. H. Chamberlin,	Finleyville,	Washington.
J. D. Wickerham,	Monongahela,	Washington.
J. A. Carson,	Speers,	Washington.
John G. Lowers,	Elco,	Washington.
Charles E. Willock,	Beallsville,	Washington.
John Hawthorne,	Millsboro,	Washington.
Dr. E. E. French,	Bentleyville,	Washington.
F. H. Condit,	Amity,	Washington.
Dr. R. W. Wolfe,	Taylorstown,	Washington.
J. A. Dickey,	Claysville,	Washington.
J. D. France,	West Middletown,	Washington.
W. J. Rose,	Boyd's Mills,	Wayne.
Clarence Bigelow,	Pleasant Mount, R. D.,	Wayne.
Reuben Lancaster,	South Sterling,	Wayne.
Ralph Gillow,	Equinunk,	Wayne.
Dr. H. C. White,	Ariel,	Wayne.
S. B. Woodmansee,	Lakewood,	Wayne.
Dr. S. Amos Ward,	Bethany,	Wayne.
N. B. Spencer,*	Honesdale,	Wayne.
Edgar Tuthill,	Hawley,	Wayne.
John Male,†	Honesdale, R. D. No. 2,	Wayne.
E. A. Zimmerman,	Leechburg (Armstrong Co.),	Westmoreland.
Charles J. Gallagher,	Salina,	Westmoreland.
H. A. Waddell,	Delmont,	Westmoreland.
Ellis Wissinger,	Tunnelton (Indiana Co.),	Westmoreland.
Dr. H. W. Tittle,	New Florence,	Westmoreland.
Dr. L. J. Reese,	Bolivar,	Westmoreland.
W. M. Nicely,	Ligonier,	Westmoreland.
J. Frank Evans,	Ruffsdale,	Westmoreland.
N. E. Rhoades,	Smithton,	Westmoreland.
J. B. White,	Monessen,	Westmoreland.
C. W. Meerhoff,	Irwin,	Westmoreland.
J. W. Jones,	Greensburg,	Westmoreland.
E. G. Crossland,	Latrobe,	Westmoreland.
H. S. Weister,	Arnold, R. D. No. 1,	Westmoreland.
G. W. Stough,	Stahlstown,	Westmoreland.
M. R. Conrad,	Nicholson,	Wyoming.
Jonathan Farr,	Meshoppen,	Wyoming.
G. P. Patterson,	Factoryville,	Wyoming.
George O. Shafer,	Falls,	Wyoming.
O. F. Ettwein,	Noxen,	Wyoming.
C. B. Pickett,	Laceyville,	Wyoming.
C. Y. Burch,	Tunkhannock,	Wyoming.
W. G. Fulton,	Stewartstown,	York.
W. S. Gotwald,	York,	York.
W. G. Owens,	Dover, R. D. No. 3,	York.
B. Payne Manifold,	Stewartstown, R. D. No. 2,	York.
C. F. Heisler,	Dallastown,	York.
J. E. Wiley,	Delta, R. D. No. 4,	York.
C. K. Weaver,	Dillsburg,	York.
W. S. Young,‡	East Prospect,	York.
F. Y. Stambaugh,	Hanover,	York.
J. W. Brooks,	Fawn Grove,	York.
Lewis Feistel,	York, R. D. No. 11,	York.
Jacob A. Stein,	Holtz,	York.
C. G. Ellicker,	Rossville,	York.
J. W. Collins,	Parke, R. D.,	York.
Dr. Frank Horning,	Hellam,	York.
Joseph Shaull,	Felton,	York.
W. S. K. Brown,	Thomasville, R. D. No. 1,	York.
Phares Geiselman,	Jacobus,	York.
Finn Jordan,	Muddy Creek Forks, R. D. No. 1,	York.
A. Z. Leib,	East Berlin,	York.
Wilson Rehmeyer,	New Freedom,	York.
John Cockley,	Manchester,	York.
J. H. Shickle,	Etters,	York.
H. Frank Fake,†	Craley,	York.

SCHOOL MEDICAL INSPECTORS.

Name.	Residence.	County.
Dr. E. W. Cashman,	York Springs,	Adams.
Dr. Harry Crouse,	Littlestown,	Adams.
Dr. J. R. Dickson,	Gettysburg,	Adams.
Dr. Eugene Elgin,	East Berlin,	Adams.
Dr. J. E. Glenn,	Fairfield,	Adams.
Dr. W. F. Hollinger,	Abbottstown,	Adams.
Dr. G. L. Rice,	McSherrystown,	Adams.
Dr. G. H. Seaks,	New Oxford,	Adams.
Dr. N. C. Trout,	Fairfield,	Adams.
Dr. W. E. Wolff,	Arendtsville,	Adams.
Dr. A. H. Aber,	Dravosburg,	Allegheny.
Dr. W. A. Arnold,	Tarentum,	Allegheny.
Dr. D. A. Atkinson,	Westview,	Allegheny.
Dr. J. M. Boice,	Clinton,	Allegheny.
Dr. J. S. Burkett,	Moon Run,	Allegheny.
Dr. J. S. Cadwalader,	Wexford,	Allegheny.
Dr. A. W. Colcord,	Clairton,	Allegheny.
Dr. W. H. Cooper,	Oakmont,	Allegheny.
Dr. J. S. Crawford,	Ingram,	Allegheny.
Dr. L. C. Creighton,	Unity Station,	Allegheny.
Dr. A. H. Eggers,	Pittsburgh,	Allegheny.
Dr. W. L. Henderson,	East McKeesport,	Allegheny.
Dr. A. W. Hopper,	Bridgeville,	Allegheny.
Dr. R. R. Jones,	Edgewood (Pittsburgh),	Allegheny.
Dr. W. A. Jones,	Hays,	Allegheny.
Dr. W. H. Leffler,	McKeesport,	Allegheny.
Dr. E. C. Lewis,	Verona,	Allegheny.
Dr. J. L. McBride,	Emsworth,	Allegheny.
Dr. J. P. McComb,	Bellevue,	Allegheny.
Dr. W. P. McCulloch,	Cheswick,	Allegheny.
Dr. W. J. McGeary,	Sharpsburg,	Allegheny.
Dr. James McNall,	Wilkinsburg,	Allegheny.
Dr. H. O. Mateer,	Pittsburgh,	Allegheny.
Dr. F. W. Mathewson,	Oakdale,	Allegheny.
Dr. W. B. Orbin,	Dormont,	Allegheny.
Dr. A. A. Peterson,	Elizabeth,	Allegheny.
Dr. J. C. Welch,	Bellevue,	Allegheny.
Dr. Lewis Willard,	North Side, Pittsburgh,	Allegheny.
Dr. G. R. Wycoff,	McKees Rocks,	Allegheny.
Dr. S. E. Ambrose,	Rural Valley,	Armstrong.
Dr. T. L. Aye,	Kelly Station,	Armstrong.
Dr. A. E. Bower,	Ford City,	Armstrong.
Dr. G. E. Cramer,	Templeton,	Armstrong.
Dr. P. R. Deemar,	Manorville,	Armstrong.
Dr. J. M. Dunkle,	Worthington,	Armstrong.
Dr. W. L. Fennel,	Salina (Westmoreland County),	Armstrong.
Dr. E. L. Fleming,	Dayton,	Armstrong.
Dr. T. R. Hillard,	Widnoon,	Armstrong.
Dr. A. M. Hoover,	Parkers Landing,	Armstrong.
Dr. J. A. Kelly,	Whitesburg,	Armstrong.
Dr. G. A. Knight,	Kaylor,	Armstrong.
Dr. B. J. Longwell,	Seminole,	Armstrong.
Dr. J. A. Lowry,	South Bend,	Armstrong.
Dr. T. N. McKee,	Kittanning,	Armstrong.
Dr. C. M. McKaughlin,	Freeport,	Armstrong.
Dr. J. D. Orr,	Leechburg,	Armstrong.
Dr. J. E. Quigley,	Adrian,	Armstrong.
Dr. C. E. Sayres,	Hawthorn (Clarion Co.),	Armstrong.
Dr. E. K. Shumaker,	New Bethlehem (Clarion Co.),	Armstrong.
Dr. A. W. Skilton,	Furnace Run,	Armstrong.
Dr. A. H. Townsend,	Apollo,	Armstrong.
Dr. B. P. Walker,	West Monterey (Clarion Co.),	Armstrong.
Dr. J. O. Brown,	Koppel,	Beaver.
Dr. E. W. Campbell,	Midland,	Beaver.
Dr. A. B. Cloak,	Freedom,	Beaver.
Dr. J. W. Cristler,	Shippingport,	Beaver.
Dr. C. B. Forcey,	Ambridge,	Beaver.
Dr. J. F. Gilliland,	Beaver Falls,	Beaver.
Dr. J. L. Miller,	Aliquippa,	Beaver.
Dr. W. M. Miller,	Hookstown,	Beaver.
Dr. C. B. Moore,	New Galilee,	Beaver.
Dr. D. C. Moore,	Monaca,	Beaver.
Dr. B. C. Sawyer,	Darlington,	Beaver.
Dr. B. W. Schaffner,	Ellwood City (Lawrence Co.),	Beaver.
Dr. G. S. Shugert,	Rochester,	Beaver.
Dr. B. B. Snodgrass,	Rochester,	Beaver.
Dr. Bruce Snodgrass,	Beaver Falls,	Beaver.
Dr. J. D. Stevenson,	Aliquippa,	Beaver.
Dr. W. C. Yolton,	Frankfort Springs,	Beaver.

School Medical Inspectors—Continued.

Name.	Residence.	County.
Dr. Wilmont Ayres,	Bedford,	Bedford.
Dr. J. G. Coles,	Hopewell,	Bedford.
Dr. A. G. Dymond,	New Enterprise,	Bedford.
Dr. A. H. Evans,	Saxton,	Bedford.
Dr. W. E. Fawcett,	Rainsburg,	Bedford.
Dr. J. G. Hanks,	Everett,	Bedford.
Dr. W. de la M. Hill,	Everett,	Bedford.
Dr. B. F. Hunt,	Clearville,	Bedford.
Dr. M. R. Long,	Buffalo Mills,	Bedford.
Dr. C. O. Miller,	Saxton,	Bedford.
Dr. D. T. Rees,	Hyndman,	Bedford.
Dr. H. A. Shimer,	Alum Bank,	Bedford.
Dr. H. I. Shoenthal,	New Paris,	Bedford.
Dr. I. C. Stayer,	Woodbury,	Bedford.
Dr. A. Z. Stoner,	Cumberland Valley,	Bedford.
Dr. A. H. Bausher,	Temple,	Berks.
Dr. O. W. Berkey,	Bally,	Berks.
Dr. G. H. Bickel,	Rehrersburg,	Berks.
Dr. H. L. Bollman,	Robesonia,	Berks.
Dr. M. F. Clouser,	Oley,	Berks.
Dr. C. B. Dotterer,	Boyertown,	Berks.
Dr. D. W. Ensminger,	Mt. Aetna,	Berks.
Dr. G. W. Fahrenbach,	Bernville,	Berks.
Dr. L. G. Hain,	Shillington,	Berks.
Dr. George Hetrick,	Birdsboro,	Berks.
Dr. R. W. Lenker,	West Leesport,	Berks.
Dr. C. E. Lerch,	Wyomissing,	Berks.
Dr. F. P. Lytle,	Birdsboro,	Berks.
Dr. F. L. R. Mattern,	Fleetwood,	Berks.
Dr. D. B. McLean,	Douglassville,	Berks.
Dr. H. U. Miller,	Mt. Penn,	Berks.
Dr. H. E. Morret,	Wernersville,	Berks.
Dr. George F. Potteiger,	Hamburg,	Berks.
Dr. H. L. Quickel,	Boyertown,	Berks.
Dr. E. Z. Ruth,	Stouchesburg,	Berks.
Dr. H. W. Saul,	Kutztown,	Berks.
Dr. C. E. Schlappich,	Bernville,	Berks.
Dr. A. A. Stamm,	Mohnton,	Berks.
Dr. Henry Stapp,	Womelsdorf,	Berks.
Dr. L. L. Thompson,	Lenhartsville,	Berks.
Dr. J. M. Walborn,	Leesport,	Berks.
Dr. Charles D. Werley,	Reading,	Berks.
Dr. G. F. Dandois,	Martinsburg,	Blair.
Dr. John B. Nason,	Tyrone,	Blair.
Dr. W. H. Robinson,	Roaring Spring,	Blair.
Dr. S. C. Smith,	Hollidaysburg,	Blair.
Dr. R. R. Whittaker,	Williamsburg,	Blair.
Dr. T. L. Wilson,	Bellwood,	Blair.
Dr. H. A. Wright,	East Freedom,	Blair.
Dr. M. B. Ballard,	Troy,	Bradford.
Dr. D. L. Bevan,	Leroy,	Bradford.
Dr. A. J. Bird,	Overton,	Bradford.
Dr. W. R. Campbell,	East Smithfield,	Bradford.
Dr. J. E. Daly,	Ulster,	Bradford.
Dr. A. E. Dann,	Canton,	Bradford.
Dr. W. T. Davison,	Canton,	Bradford.
Dr. H. C. Down,	Wysox,	Bradford.
Dr. J. F. Haines,	Monroeton,	Bradford.
Dr. W. F. Hershberger,	New Albany,	Bradford.
Dr. F. L. Inslee,	LeRaysville,	Bradford.
Dr. H. O. Kingsley,	Burlington,	Bradford.
Dr. H. D. LaPlant,	Sayre,	Bradford.
Dr. J. C. Lee,	Rummerfield,	Bradford.
Dr. C. S. Means,	Towanda,	Bradford.
Dr. J. D. Mingos,	Laquin,	Bradford.
Dr. A. L. Parks,	Rome,	Bradford.
Dr. C. L. Stevens,	Athens,	Bradford.
Dr. G. H. B. Terry,	Wyalusing,	Bradford.
Dr. F. A. Thompson,	Towanda,	Bradford.
Dr. J. C. Tripp,	Warren Centre,	Bradford.
Dr. A. C. Althouse,	Dublin,	Bucks.
Dr. H. L. Bassett,	Yardley,	Bucks.
Dr. H. B. Boring,	Richlandtown,	Bucks.
Dr. C. N. Burkhardt,	Chalfont,	Bucks.
Dr. J. M. Carter,	Eddington,	Bucks.

School Medical Inspectors—Continued.

Name.	Residence.	County.
Dr. F. G. Cope,	Upper Black Eddy,	Bucks.
Dr. W. S. Erdman,	Buckingham,	Bucks.
Dr. J. A. Fell,	Doylestown,	Bucks.
Dr. Horace Fleckenstine,	Newportville,	Bucks.
Dr. A. E. Fretz,	Sellersville,	Bucks.
Dr. H. C. Grim,	Trumbauersville,	Bucks.
Dr. J. W. Harper,	Forest City,	Bucks.
Dr. I. F. Huff,	Sellersville,	Bucks.
Dr. S. A. Leinbach,	Quakertown,	Bucks.
Dr. Henry Lovett,	Langhorne,	Bucks.
Dr. S. P. McIlhatten,	Ivyland,	Bucks.
Dr. Austin O'Connell,	Bucksville,	Bucks.
Dr. G. A. Parker, Jr.,	Newtown,	Bucks.
Dr. I. Swartz Plymire,	Doylestown,	Bucks.
Dr. E. E. Pownall,	Richboro,	Bucks.
Dr. J. R. Umstead,	Quakertown,	Bucks.
Dr. M. E. Weaver,	Benjamin,	Bucks.
Dr. S. S. P. Wetmore,	Morrisville,	Bucks.
Dr. N. B. Williams,	Perkasie,	Bucks.
Dr. G. M. Beatty,	Chicora,	Butler.
Dr. J. S. Campbell,	Butler,	Butler.
Dr. W. B. Campbell,	Harrisville,	Butler.
Dr. J. L. Christie,	Conoquenessing,	Butler.
Dr. R. B. Elrick,	Petrolia,	Butler.
Dr. C. F. Engel,	Prospect,	Butler.
Dr. W. R. Hockenberry,	Slippery Rock,	Butler.
Dr. C. S. Hunter,	West Sunbury,	Butler.
Dr. W. W. Lasher,	Saxonburg,	Butler.
Dr. W. T. Lowery,	North Washington,	Butler.
Dr. George H. Mathiott,	Mars,	Butler.
Dr. S. E. Ralston,	Zelienople,	Butler.
Dr. E. U. Snyder,	Portersville,	Butler.
Dr. V. F. Thomas,	Evans City,	Butler.
Dr. A. F. Akers,	Gallitzin,	Cambria.
Dr. G. R. Anderson,	Barnesboro,	Cambria.
Dr. J. W. Barr,	Nanty Glo,	Cambria.
Dr. W. A. Blair,	Patton,	Cambria.
Dr. I. C. Blaisdell,	Wilmore,	Cambria.
Dr. A. W. Brinham,	Scalp Level,	Cambria.
Dr. C. C. Custer,	Johnstown,	Cambria.
Dr. A. F. Dunsmore,	Barnesboro,	Cambria.
Dr. C. A. Fitzgerald,	South Fork,	Cambria.
Dr. A. C. Hepler,	Colver,	Cambria.
Dr. C. B. Jones,	Summerhill,	Cambria.
Dr. F. C. Jones,	Ebensburg,	Cambria.
Dr. W. O. Keffer,	Frugality,	Cambria.
Dr. J. D. Keiper,	Johnstown,	Cambria.
Dr. A. W. Leech,	Beaverdale,	Cambria.
Dr. F. J. Livingston,	Salix,	Cambria.
Dr. W. W. Livingston,	Dunlo,	Cambria.
Dr. J. A. Lynch,	Cresson,	Cambria.
Dr. J. V. Mulvehill,	Carrolltown,	Cambria.
Dr. H. T. Prideaux,	Cresson,	Cambria.
Dr. C. C. Rush,	Portage,	Cambria.
Dr. J. F. Schofield,	Portage,	Cambria.
Dr. H. H. Somerville,	Chest Springs,	Cambria.
Dr. J. S. Taylor,	Johnstown,	Cambria.
Dr. H. F. Tomb,	Johnstown,	Cambria.
Dr. J. F. Wood,	Barnesboro,	Cambria.
Dr. G. I. Yearick,	Lilly,	Cambria.
Dr. H. S. Falk,	Emporium,	Cameron.
Dr. J. D. Johnston,	Driftwood,	Cameron.
Dr. C. J. Balliet,	Lehighton,	Carbon.
Dr. E. G. Bray,	East Mauch Chunk,	Carbon.
Dr. J. K. Farrar,	Audenreid,	Carbon.
Dr. H. E. Hersch,	Palmerton,	Carbon.
Dr. G. P. Hill,	Lansford,	Carbon.
Dr. P. M. Hunsicker,	Beaver Meadows,	Carbon.
Dr. O. J. Kingsbury,	Nesquehoning,	Carbon.
Dr. W. L. Kutz,	Weissport,	Carbon.
Dr. A. C. Snyder,	White Haven,	Carbon.
Dr. J. A. Trexler,	Lehighton,	Carbon.

School Medical Inspectors—Continued.

Name.	Residence.	County.
Dr. J. R. G. Allison,	Center Hall,	Centre.
Dr. S. G. Coons,	Stormstown,	Centre.
Dr. J. V. Foster,	State College,	Centre.
Dr. J. A. Hardenbergh,	Millheim,	Centre.
Dr. E. H. Harris,	Snow Shoe,	Centre.
Dr. S. M. Huff,	Bellefonte,	Centre.
Dr. W. U. Irwin,	Fleming,	Centre.
Dr. W. J. Kurtz,	Howard,	Centre.
Dr. P. H. Shelley,	Pleasant Gap,	Centre.
Dr. H. H. Thompson,	Philipsburg,	Centre.
Dr. J. A. Thompson,	Port Matilda,	Centre.
Dr. T. G. Aiken,	Berwyn,	Chester.
Dr. C. L. Barry,	Oxford,	Chester.
Dr. A. W. Baugh,	Paoli,	Chester.
Dr. W. W. Betts,	Chadds Ford (Delaware Co.),	Chester.
Dr. J. H. Burkartmaier,	Avondale,	Chester.
Dr. W. F. Cassell,	Spring City,	Chester.
Dr. G. T. Holcombe,	Oxford,	Chester.
Dr. D. E. Hutchinson,	East Downingtown,	Chester.
Dr. O. J. Klevan,	Unionville,	Chester.
Dr. J. R. Maxwell,	Parkesburg,	Chester.
Dr. H. Y. Pennell,	East Downingtown,	Chester.
Dr. C. S. Reynolds,	Kennett Square,	Chester.
Dr. Joseph Scattergood,	West Chester,	Chester.
Dr. S. H. Scott,	Coatesville,	Chester.
Dr. Jackson Taylor,	Coatesville,	Chester.
Dr. J. R. Bangert,	Shippenville,	Clarion.
Dr. F. K. Booth,	Fairmount City,	Clarion.
Dr. S. A. Brown,	Foxburg,	Clarion.
Dr. G. W. Clark,	Shippenville,	Clarion.
Dr. C. L. Clover,	Knox,	Clarion.
Dr. J. M. Fitzgerald,	Clarion,	Clarion.
Dr. R. J. Greer,	East Brady,	Clarion.
Dr. A. J. Hepler,	New Bethlehem,	Clarion.
Dr. C. V. Hepler,	Hawthorn,	Clarion.
Dr. C. W. Hoffman,	Rimersburg,	Clarion.
Dr. C. C. Huston,	Knox,	Clarion.
Dr. S. L. Lackey,	Limestone,	Clarion.
Dr. D. L. McAninch,	Lamartine,	Clarion.
Dr. N. M. Meals,	Callensburg,	Clarion.
Dr. J. B. Miller,	Sligo,	Clarion.
Dr. F. P. Phillips,	Clarion,	Clarion.
Dr. C. C. Ross,	Clarion,	Clarion.
Dr. C. E. Sayers,	Hawthorn,	Clarion.
Dr. H. B. Summerville,	Rimersburg,	Clarion.
Dr. B. P. Walker,	West Monterey,	Clarion.
Dr. B. G. Wilson,	Clarion,	Clarion.
Dr. C. B. Woods,	Curllsville,	Clarion.
Dr. W. C. Browne,	Burnside,	Clearfield.
Dr. W. S. Bryan,	Ramey,	Clearfield.
Dr. A. D. Cowdrick,	Clearfield,	Clearfield.
Dr. J. A. Dale,	Philipsburg (Centre Co.),	Clearfield.
Dr. J. W. Ferman,	Luthersburg,	Clearfield.
Dr. I. S. Flegal,	Karthaus,	Clearfield.
Dr. G. B. Goheen,	Coalport,	Clearfield.
Dr. F. W. Harper,	Irvona,	Clearfield.
Dr. M. E. Hurd,	Mahaffey,	Clearfield.
Dr. H. H. Lewis,	Penfield,	Clearfield.
Dr. A. C. Lynn,	Osceola Mills,	Clearfield.
Dr. S. M. Martsolf,	Westover,	Clearfield.
Dr. G. E. Mauk,	Woodland,	Clearfield.
Dr. J. A. Miller,	Grampian,	Clearfield.
Dr. S. J. Miller,	Madera,	Clearfield.
Dr. J. M. Quigley,	Clearfield,	Clearfield.
Dr. G. A. Ricketts,	Smithmill,	Clearfield.
Dr. J. F. Rowles,	Mahaffey,	Clearfield.
Dr. I. H. White,	Houtzdale,	Clearfield.
Dr. R. L. Williams,	Houtzdale,	Clearfield.
Dr. H. A. Woodside,	Lumber City,	Clearfield.
Dr. H. L. Woodside,	Bigler,	Clearfield.
Dr. J. M. Corson,	Chatham Run,	Clinton.
Dr. C. L. Fullmer,	Renovo,	Clinton.
Dr. S. J. McGhee,	Lock Haven,	Clinton.
Dr. I. O. Mahr,	Loganton,	Clinton.
Dr. G. D. Mervine,	Bitumen,	Clinton.

School Medical Inspectors—Continued.

Name.	Residence.	County.
Dr. A. B. Painter,	Mill Hall,	Clinton.
Dr. T. McD. Tibbens,	Beech Creek,	Clinton.
Dr. W. E. Welliver,	Lock Haven,	Clinton.
Dr. S. B. Arment,	Bloomsburg,	Columbia.
Dr. G. E. Follmer,	Orangeville,	Columbia.
Dr. H. G. Fortner,	Centralia,	Columbia.
Dr. J. M. Gemmill,	Millville,	Columbia.
Dr. L. B. Kline,	Catawissa,	Columbia.
Dr. J. R. Montgomery,	Bloomsburg,	Columbia.
Dr. I. E. Patterson,	Benton,	Columbia.
Dr. Ambrose Shuman,	Catawissa,	Columbia.
Dr. J. L. Axtell,	Cochranton,	Crawford.
Dr. H. L. Brush,	Conneaut Lake,	Crawford.
Dr. C. W. Burgwin,	Guys Mills,	Crawford.
Dr. M. C. Carpenter,	Linesville,	Crawford.
Dr. R. W. Clark,	Venango,	Crawford.
Dr. A. W. Clouse,	Geneva,	Crawford.
Dr. H. M. Daniels,	Woodcock,	Crawford.
Dr. A. L. Dennis,	Conneautville,	Crawford.
Dr. S. J. Dickey,	Blooming Valley,	Crawford.
Dr. H. H. Dight,	Titusville,	Crawford.
Dr. G. W. Ellison,	Townville,	Crawford.
Dr. W. M. Gamble,	Centerville,	Crawford.
Dr. S. F. Hazen,	Hartstown,	Crawford.
Dr. G. E. Humphrey,	Cambridge Springs,	Crawford.
Dr. F. K. McCune,	Saegerstown,	Crawford.
Dr. E. E. Maitland,	Spartansburg,	Crawford.
Dr. D. C. Mock,	Cambridge Springs,	Crawford.
Dr. J. R. Mosier,	Meadville,	Crawford.
Dr. W. H. Quay,	Townville,	Crawford.
Dr. J. K. Roberts,	Meadville,	Crawford.
Dr. W. W. Shaffer,	Cochranton,	Crawford.
Dr. R. S. Smith,	Saegerstown,	Crawford.
Dr. C. L. Williams,	Harmonsburg,	Crawford.
Dr. H. B. Bashore,	West Fairview,	Cumberland.
Dr. G. C. Irwin,	Mt. Holly Springs,	Cumberland.
Dr. S. A. Kirkpatrick,	New Cumberland,	Cumberland.
Dr. E. K. Lefever,	Boiling Springs,	Cumberland.
Dr. H. H. Longsdorf,	Dickinson,	Cumberland.
Dr. J. Bruce McCreary,	Shippensburg,	Cumberland.
Dr. S. E. Mowery,	Mechanicsburg,	Cumberland.
Dr. E. C. Neely,	Newville,	Cumberland.
Dr. E. R. Plank,	Carlisle,	Cumberland.
Dr. N. B. Reeser,	Newville,	Cumberland.
Dr. D. C. Stoner,	Bowmansadle,	Cumberland.
Dr. J. F. Blecher,	Middletown,	Dauphin.
Dr. Benjamin Brown,	Linglestown,	Dauphin.
Dr. A. C. Coble,	Dauphin,	Dauphin.
Dr. H. W. George,	Middletown,	Dauphin.
Dr. L. C. Havice,	Berrysburg,	Dauphin.
Dr. M. L. Hershey,	Hershey,	Dauphin.
Dr. D. E. Hottenstein,	Millersburg,	Dauphin.
Dr. C. E. L. Keene,	Harrisburg,	Dauphin.
Dr. W. B. Kirkpatrick,	Highspire,	Dauphin.
Dr. W. E. Lebo,	Gratz,	Dauphin.
Dr. M. D. Lehr,	Lykens,	Dauphin.
Dr. L. S. Marshall,	Halifax,	Dauphin.
Dr. F. T. Romberger,	Elizabethville,	Dauphin.
Dr. H. A. Shaffer,	Williamstown,	Dauphin.
Dr. A. L. Shope,	Penbrook,	Dauphin.
Dr. W. M. Shull,	Hummelstown,	Dauphin.
Dr. W. W. Betts,	Chadds Ford,	Delaware.
Dr. E. C. Bullock,	Upland,	Delaware.
Dr. H. C. Dooling,	Norwood Station,	Delaware.
Dr. J. S. Eynon,	Chester,	Delaware.
Dr. S. P. Gray,	Chester,	Delaware.
Dr. E. M. Harvey,	Media,	Delaware.
Dr. William F. Moore,	Llanerch,	Delaware.
Dr. F. R. Nothnagle,	Chester,	Delaware.
Dr. M. A. Neufeld,	Chester,	Delaware.
Dr. J. L. Pyle,	Gradyville,	Delaware.
Dr. V. M. Reynolds,	Darby,	Delaware.
Dr. I. B. Roberts,	Llanerch,	Delaware.
Dr. N. D. Smith,	Rutledge,	Delaware.

School Medical Inspectors—Continued.

Name.	Residence.	County.
Dr. J. C. Starbuck,	Media,	Delaware.
Dr. H. F. Taylor,	Ridley Park,	Delaware.
Dr. J. William Wood,	Chester,	Delaware.
Dr. Stanley Barratt,	Wilcox,	Elk.
Dr. S. E. Hayes,	Byrnedale,	Elk.
Dr. G. M. Hutchinson,	Dagus Mines,	Elk.
Dr. A. A. Mullhaupt,	St. Marys,	Elk.
Dr. M. M. Rankin,	Ridgway,	Elk.
Dr. H. H. Smith,	Johnsonburg,	Elk.
Dr. E. C. Straessly,	Elbon,	Elk.
Dr. D. W. Thomas,	Benezette,	Elk.
Dr. J. C. Douville,	North East,	Erie.
Dr. V. B. Eller,	McKean,	Erie.
Dr. W. E. Geer,	Union City,	Erie.
Dr. M. S. Gillespie,	Edinboro,	Erie.
Dr. F. C. Hart,	Girard,	Erie.
Dr. J. B. Howe,	Erie,	Erie.
Dr. E. E. Kendall,	Waterford,	Erie.
Dr. H. E. Lyons,	Fairview,	Erie.
Dr. J. M. Peters,	Albion,	Erie.
Dr. J. F. Rutherford,	Cranesville,	Erie.
Dr. A. L. Smith,	Corry,	Erie.
Dr. R. W. Thompson,	Wesleyville,	Erie.
Dr. J. S. Cogan,	Dawson,	Fayette.
Dr. S. C. Dowds,	Dunbar,	Fayette.
Dr. R. T. Gribble,	Fairchance,	Fayette.
Dr. R. E. Heath,	Fairchance,	Fayette.
Dr. F. S. Hoover,	Brownsville,	Fayette.
Dr. E. R. Ingraham,	Masontown,	Fayette.
Dr. C. B. Johnson,	New Salem,	Fayette.
Dr. L. D. Johnson,	Ohioplye,	Fayette.
Dr. J. L. Junk,	Connellsville,	Fayette.
Dr. N. B. Lowman,	Bellevernon,	Fayette.
Dr. W. T. Myers,	Markleysburg,	Fayette.
Dr. V. P. Pisula,	Everson,	Fayette.
Dr. M. H. Powers,	Point Marion,	Fayette.
Dr. G. H. Robinson,	Uniontown,	Fayette.
Dr. Charles Ryan,	Republic,	Fayette.
Dr. E. C. Sherrick,	Connellsville,	Fayette.
Dr. A. C. Smith,	South Brownsville,	Fayette.
Dr. F. J. Bovard,	Tionesta,	Forest.
Dr. J. J. Brewer,	Clarington,	Forest.
Dr. C. Y. Detar,	Kellettville,	Forest.
Dr. W. E. Holland,	Fayetteville,	Franklin.
Dr. J. H. Kinter,	St. Thomas,	Franklin.
Dr. E. W. Palmer,	Greencastle,	Franklin.
Dr. L. H. Saxe,	Fannettsburg,	Franklin.
Dr. A. B. Snively,	Waynesboro,	Franklin.
Dr. M. W. Stofer,	Chambersburg,	Franklin.
Dr. S. B. Thomas,	Waynesboro,	Franklin.
Dr. D. F. Unger,	Mercersburg,	Franklin.
Dr. T. D. White,	Orrstown,	Franklin.
Dr. Guy Zimmerman,	Lemasters,	Franklin.
Dr. R. B. Campbell,	New Grenada,	Fulton.
Dr. H. C. McClain,	Hustontown,	Fulton.
Dr. J. M. McKibben,	Buck Valley,	Fulton.
Dr. J. W. Mosser,	McConnellsburg,	Fulton.
Dr. B. J. Birch,	Greensboro,	Greene.
Dr. J. A. Coen,	Bristoria,	Greene.
Dr. J. R. Day,	Ninevah,	Greene.
Dr. J. W. Grimes,	Waynesburg,	Greene.
Dr. S. H. Iams,	Waynesburg,	Greene.
Dr. L. F. Milliken,	Graysville (P. O. Harveys),	Greene.
Dr. H. C. Rice,	New Freeport,	Greene.
Dr. C. W. Spragg,	Waynesburg,	Greene.
Dr. S. J. Titus,	Jefferson,	Greene.
Dr. F. S. Ullom,	Waynesburg,	Greene.
Dr. J. M. Beck,	Alexandria,	Huntingdon.
Dr. G. C. Brumbaugh,	Huntingdon,	Huntingdon.
Dr. W. J. Campbell,	Mt. Union,	Huntingdon.
Dr. R. R. Decker,	Orbisonia,	Huntingdon.

School Medical Inspectors—Continued.

Name.	Residence.	County.
Dr. A. H. Evans,	Saxton (Bedford Co.),	Huntingdon.
Dr. H. B. Fetterhoof,	Huntingdon,	Huntingdon.
Dr. H. C. Frontz,	Huntingdon,	Huntingdon.
Dr. E. H. Green,	Mill Creek,	Huntingdon.
Dr. S. R. Gregory,	Mt. Union,	Huntingdon.
Dr. G. G. Harman,	Huntingdon,	Huntingdon.
Dr. B. E. Himes,	Shade Gap,	Huntingdon.
Dr. H. G. Horton,	Three Springs,	Huntingdon.
Dr. J. M. Keichline, Jr.,	Petersburg,	Huntingdon.
Dr. H. V. Locke,	Orbisonia,	Huntingdon.
Dr. C. A. R. McClain,	Mt. Union,	Huntingdon.
Dr. H. B. Garrah,	Robertsdale,	Huntingdon.
Dr. H. E. Miller,	McAlvey's Fort,	Huntingdon.
Dr. J. G. Spangler,	Mapleton Depot,	Huntingdon.
Dr. W. A. Taylor,	Broad Top,	Huntingdon.
Dr. H. C. Wilson,	Warriors Mark,	Huntingdon.
Dr. R. M. Alexander,	Bolivar,	Indiana.
Dr. J. A. Barker,	Saltsburg,	Indiana.
Dr. J. A. Elkin,	Creekside,	Indiana.
Dr. J. G. Fisher,	Plumville,	Indiana.
Dr. W. E. Griffith,	Iselin,	Indiana.
Dr. C. G. Harmon,	West Lebanon,	Indiana.
Dr. William Johns,	Brush Valley,	Indiana.
Dr. S. A. Kamerer,	Smicksburg,	Indiana.
Dr. E. B. Lewis,	Glen Campbell,	Indiana.
Dr. J. S. Miller,	Clymer,	Indiana.
Dr. J. W. Morrow,	March,	Indiana.
Dr. W. H. Nix,	Wehrum,	Indiana.
Dr. R. R. Norton,	Blairsville,	Indiana.
Dr. E. E. Onstott,	Saltsburg,	Indiana.
Dr. J. H. Peterman,	Cherrytree,	Indiana.
Dr. C. P. Reed,	Homer City,	Indiana.
Dr. C. E. Rink,	Indiana,	Indiana.
Dr. W. J. Salisbury,	Armagh,	Indiana.
Dr. R. E. Schall,	Arcadia,	Indiana.
Dr. E. F. Shaulis,	Indiana,	Indiana.
Dr. W. L. Shields,	Kent,	Indiana.
Dr. C. M. Smith,	Plumville,	Indiana.
Dr. T. D. Stephens,	Penn Run,	Indiana.
Dr. J. M. Stewart,	Marion Centre,	Indiana.
Dr. A. F. Balmer,	Brookville,	Jefferson.
Dr. S. M. Beyer,	Punxsutawney,	Jefferson.
Dr. J. P. Bottenhorn,	Sigel,	Jefferson.
Dr. I. D. Bowser,	Reynoldsville,	Jefferson.
Dr. S. R. Huff,	Hazen,	Jefferson.
Dr. G. H. Humphreys,	Brockwayville,	Jefferson.
Dr. A. F. McCormick,	Falls Creek (Clearfield Co.),	Jefferson.
Dr. A. C. McKinley,	Corsica,	Jefferson.
Dr. S. J. Morris,	Hamilton,	Jefferson.
Dr. W. C. Newcome,	Big Run,	Jefferson.
Dr. J. F. Raine,	Sykesville,	Jefferson.
Dr. J. C. Sayers,	Reynoldsville,	Jefferson.
Dr. A. J. Simpson,	Summerville,	Jefferson.
Dr. A. C. Whitehill,	Brookville,	Jefferson.
Dr. W. H. Banks,	Mifflintown,	Juniata.
Dr. J. D. Brown,	Okeson,	Juniata.
Dr. J. W. Deckard,	Richfield,	Juniata.
Dr. W. H. Haines,	Thompsontown,	Juniata.
Dr. I. G. Headings,	McAllisterville,	Juniata.
Dr. J. G. Heading,	Port Royal,	Juniata.
Dr. B. F. Long,	Mifflin,	Juniata.
Dr. R. M. Quig,	East Waterford,	Juniata.
Dr. A. W. Shelly,	Port Royal,	Juniata.
Dr. H. F. Willard,	Mexico,	Juniata.
Dr. H. O. Baldwin,	Dalton,	Lackawanna.
Dr. S. D. Davis,	Jermyn,	Lackawanna.
Dr. G. A. Kerling,	Gouldsboro (Wayne Co.),	Lackawanna.
Dr. W. E. Lloyd,	Forest City (Susquehanna Co.),	Lackawanna.
Dr. R. B. Mackey,	Waverly,	Lackawanna.
Dr. R. N. Mackey,	Clarks Summit,	Lackawanna.
Dr. L. J. Muthart,	Jermyn,	Lackawanna.
Dr. W. H. Newman,	Bald Mount,	Lackawanna.
Dr. W. A. Smythe,	Moosic,	Lackawanna.
Dr. C. A. Zeller,	Dalton,	Lackawanna.

School Medical Inspectors—Continued.

Name.	Residence.	County.
Dr. L. M. Bryson,	Paradise,	Lancaster.
Dr. G. E. Day,	Strasburg,	Lancaster.
Dr. H. C. Egley,	Kirkwood,	Lancaster.
Dr. B. F. Good,	Letort,	Lancaster.
Dr. A. H. Helm,	New Providence,	Lancaster.
Dr. C. E. Helm,	Bart,	Lancaster.
Dr. J. T. Herr,	Landisville,	Lancaster.
Dr. G. B. Hershey,	Gap,	Lancaster.
Dr. J. D. Hershey,	Manheim,	Lancaster.
Dr. W. G. Hess,	Greene,	Lancaster.
Dr. T. E. Ingram,	Marietta,	Lancaster.
Dr. T. S. Irwin,	Christiana,	Lancaster.
Dr. G. C. Kinard,	Lincoln,	Lancaster.
Dr. G. W. Kinard,	Leacock,	Lancaster.
Dr. J. R. Lehman,	Mountville,	Lancaster.
Dr. H. A. Long,	Brickerville,	Lancaster.
Dr. J. L. Mowery,	Lancaster,	Lancaster.
Dr. W. F. Mylin,	Intercourse,	Lancaster.
Dr. J. J. Newpher,	Mount Joy,	Lancaster.
Dr. Richard Reeser,	Columbia,	Lancaster.
Dr. D. S. Regar,	Akron,	Lancaster.
Dr. W. S. Regar,	Ephrata,	Lancaster.
Dr. T. M. Rohrer,	Quarryville,	Lancaster.
Dr. L. R. Rothermel,	Denver,	Lancaster.
Dr. R. S. Schweitzer,	Adamstown,	Lancaster.
Dr. J. A. Smith,	Reamstown,	Lancaster.
Dr. J. C. Stever,	Bainbridge,	Lancaster.
Dr. Vere Treichler,	Elizabethtown,	Lancaster.
Dr. H. Walter,	Rothsville,	Lancaster.
Dr. J. W. Wenger,	Terre Hill,	Lancaster.
Dr. P. R. Wentz,	New Holland,	Lancaster.
Dr. J. L. Winters,	Blue Ball,	Lancaster.
Dr. C. H. Witmer,	Lancaster,	Lancaster.
Dr. W. C. Autenreith,	Bessemer,	Lawrence.
Dr. H. E. Barr,	New Wilmington,	Lawrence.
Dr. W. D. Cleland,	New Castle,	Lawrence.
Dr. J. C. Douthitt,	Pulaski,	Lawrence.
Dr. E. E. Lamb,	Ellwood City,	Lawrence.
Dr. R. G. Miles,	New Castle,	Lawrence.
Dr. H. C. Mitchell,	Edinburg,	Lawrence.
Dr. Benjamin Sawyer,	Darlington (Beaver Co.),	Lawrence.
Dr. F. F. Urey,	New Castle,	Lawrence.
Dr. F. M. Wagner,	Wampum,	Lawrence.
Dr. Samuel Warner,	New Castle,	Lawrence.
Dr. S. D. Bashore,	Palmyra,	Lebanon.
Dr. M. R. Fisher,	Palmyra,	Lebanon.
Dr. H. L. Gerberich,	Lebanon,	Lebanon.
Dr. A. W. Gernert,	Myerstown,	Lebanon.
Dr. S. A. Light,	Lebanon,	Lebanon.
Dr. D. M. Rank,	Annville,	Lebanon.
Dr. P. D. Reich,	Jonestown,	Lebanon.
Dr. U. G. Risser,	Campbelltown,	Lebanon.
Dr. J. M. Strohm,	Fredericksburg,	Lebanon.
Dr. I. K. Urich,	Annville,	Lebanon.
Dr. F. B. Witmer,	Lebanon,	Lebanon.
Dr. H. C. Witmeyer,	Lebanon,	Lebanon.
Dr. C. L. Zimmerman,	Richland,	Lebanon.
Dr. F. D. Zimmerman,	Schaefferstown,	Lebanon.
Dr. M. J. Backenstoe,	Emaus,	Lehigh.
Dr. R. Bloss,	West Bethlehem,	Lehigh.
Dr. J. T. Butz,	Allentown,	Lehigh.
Dr. H. B. Erdman,	Macungie,	Lehigh.
Dr. W. L. Estes, Jr.,	South Bethlehem,	Lehigh.
Dr. H. E. Klingaman,	Emaus,	Lehigh.
Dr. F. H. Long,	Coopersburg,	Lehigh.
Dr. W. J. Lowright,	Center Valley,	Lehigh.
Dr. Robert Morgan,	Slatington,	Lehigh.
Dr. C. H. Muschlitz,	Slatington,	Lehigh.
Dr. W. A. Riegel,	Catasauqua,	Lehigh.
Dr. C. C. Rodgers,	Allentown,	Lehigh.
Dr. R. T. Sowden,	Slatedale,	Lehigh.
Dr. E. A. Adams,	Wilkes-Barre,	Luzerne.
Dr. Alexander Armstrong,	White Haven,	Luzerne.
Dr. E. W. Bixby,	Wilkes-Barre,	Luzerne.
Dr. M. L. Briggs,	Shickshinny,	Luzerne.
Dr. A. C. Brooks,	Wilkes-Barre,	Luzerne.

School Medical Inspectors—Continued.

Name.	Residence.	County.
Dr. J. C. Fleming,	Dallas,	Luzerne.
Dr. Stanley Freeman,	Wilkes-Barre,	Luzerne.
Dr. P. J. Gorman,	Pittston,	Luzerne.
Dr. D. A. Hart,	Wapwallopen,	Luzerne.
Dr. W. S. Helman,	Avoca,	Luzerne.
Dr. G. L. Hoffman,	Forty Fort,	Luzerne.
Dr. John Howorth,	Wilkes-Barre,	Luzerne.
Dr. D. A. W. Huebner,	Fern Glen,	Luzerne.
Dr. J. H. Hughes,	Nanticoke,	Luzerne.
Dr. F. J. Kosek,	Wilkes-Barre,	Luzerne.
Dr. A. T. McClintock,	Wilkes-Barre,	Luzerne.
Dr. C. H. Miner,	Wilkes-Barre,	Luzerne.
Dr. H. M. Neale,	Upper Lehigh,	Luzerne.
Dr. D. G. Robinhold,	Forty Fort,	Luzerne.
Dr. M. C. Rumbaugh,	Dorranceton,	Luzerne.
Dr. B. C. Rumbel,	Conyngham,	Luzerne.
Dr. E. A. Sweeney,	Wilkes-Barre,	Luzerne.
Dr. F. D. Thomas,	Kingston,	Luzerne.
Dr. L. M. Thompson,	Dorranceton,	Luzerne.
Dr. C. W. Tressler,	Shickshinny,	Luzerne.
Dr. M. J. VanHorn,	Town Hill,	Luzerne.
Dr. R. S. Woehrle,	Miners Mills,	Luzerne.
Dr. R. H. Born,	Montoursville,	Lycoming.
Dr. W. E. Delaney,	Williamsport,	Lycoming.
Dr. J. L. Derr,	Lairdsville,	Lycoming.
Dr. R. B. Hayes,	Jersey Shore,	Lycoming.
Dr. A. P. Hull,	Montgomery,	Lycoming.
Dr. D. E. Kies,	Hughesville,	Lycoming.
Dr. J. L. Mansuy,	Ralston,	Lycoming.
Dr. R. H. Milnor,	Warrensville,	Lycoming.
Dr. A. V. Persing,	Allenwood,	Lycoming.
Dr. J. E. Schaefer,	Cogan Station,	Lycoming.
Dr. Charles Schneider,	South Williamsport,	Lycoming.
Dr. J. W. VanHorn,	Montoursville,	Lycoming.
Dr. C. D. Voorhees,	Hughesville,	Lycoming.
Dr. A. T. Welker,	Collomsville,	Lycoming.
Dr. T. K. Wood,	Muncy,	Lycoming.
Dr. C. W. Youngman,	Williamsport,	Lycoming.
Dr. H. M. Cleveland,	Mt. Jewett,	McKean.
Dr. A. J. Colcord,	Port Allegany,	McKean.
Dr. L. W. Dana,	Kane,	McKean.
Dr. C. F. Elliott,	Mt. Jewett,	McKean.
Dr. G. P. Meecham,	Eldred,	McKean.
Dr. W. S. Moyer,	Rixford,	McKean.
Dr. W. A. Ostrander,	Smethport,	McKean.
Dr. F. W. Paton,	Bradford,	McKean.
Dr. George Bagnall,	Stoneboro,	Mercer.
Dr. C. H. Bailey,	Jamestown,	Mercer.
Dr. Fred Batteiger,	Greenville,	Mercer.
Dr. P. E. Biggins,	Sharpsville,	Mercer.
Dr. C. C. Campman,	West Middlesex,	Mercer.
Dr. J. C. Cooley,	Sandy Lake,	Mercer.
Dr. I. H. Cotton,	Leesburg,	Mercer.
Dr. J. E. Ferringer,	Stoneboro,	Mercer.
Dr. P. P. Fisher,	Sharon,	Mercer.
Dr. J. D. Hoffman,	Jackson Centre,	Mercer.
Dr. T. F. Hogue,	Fredonia,	Mercer.
Dr. A. I. Hoon,	Mercer,	Mercer.
Dr. P. T. Hope,	Mercer,	Mercer.
Dr. John Hunter,	West Middlesex,	Mercer.
Dr. M. E. MacBride,	Grove City,	Mercer.
Dr. B. A. Montgomery,	Grove City,	Mercer.
Dr. A. A. Parks,	Fredonia,	Mercer.
Dr. D. H. Smith,	Mill Brook,	Mercer.
Dr. C. H. Brisbin,	Lewistown,	Mifflin.
Dr. S. M. Hazlett,	Allensville,	Mifflin.
Dr. C. M. Johnson,	McVeytown,	Mifflin.
Dr. C. J. Stambaugh,	Reedsville,	Mifflin.
Dr. B. P. Steele,	McVeytown,	Mifflin.
Dr. W. L. Angle,	East Stroudsburg,	Monroe.
Dr. A. L. Rhoads,	Tobyhanna,	Monroe.
Dr. E. A. Shupp,	Kunkletown,	Monroe.
Dr. J. A. Stotz,	Brodheadsville,	Monroe.
Dr. G. S. Travis,	East Stroudsburg,	Monroe.
Dr. A. A. Wertman,	Tannersville,	Monroe.

School Medical Inspectors—Continued.

Name.	Residence.	County.
Dr. F. B. Allen,	North Wales,	Montgomery.
Dr. H. C. Allen,	Schwenkville,	Montgomery.
Dr. W. Z. Anders,	Trappe,	Montgomery.
Dr. A. N. Baggs,	Abington,	Montgomery.
Dr. S. C. Basney,	Mont Clare,	Montgomery.
Dr. J. W. Bauman,	Lansdale,	Montgomery.
Dr. H. A. Bostock,	Norristown,	Montgomery.
Dr. Frederick Bushong,	Pottstown,	Montgomery.
Dr. A. J. Craig,	Fort Washington,	Montgomery.
Dr. F. E. Donnelly,	Conshohocken,	Montgomery.
Dr. Andrew Godfrey,	Ambler,	Montgomery.
Dr. W. H. Imhoff,	Willow Grove,	Montgomery.
Dr. V. Z. Keeler,	Harleyville,	Montgomery.
Dr. J. C. Landis,	Pennsburg,	Montgomery.
Dr. D. B. Moyer,	Hatfield,	Montgomery.
Dr. N. H. Rahn,	Souderton,	Montgomery.
Dr. W. R. Roberts,	Norristown,	Montgomery.
Dr. A. L. Ruth,	Conshohocken,	Montgomery.
Dr. H. N. Scholl,	Kulpsville,	Montgomery.
Dr. J. H. Seiple,	Centre Square,	Montgomery.
Dr. D. W. Shelly,	Norristown,	Montgomery.
Dr. E. C. Town,	Narberth,	Montgomery.
Dr. B. A. Tyler,	Royersford,	Montgomery.
Dr. M. Y. Weber,	Lower Providence,	Montgomery.
Dr. W. J. Wright,	Skippack,	Montgomery.
Dr. Cameron Shultz,	Danville,	Montour.
Dr. J. H. Snyder,	Washingtonville,	Montour.
Dr. C. E. Beck,	Portland,	Northampton.
Dr. W. J. Bieber,	Bethlehem,	Northampton.
Dr. T. A. Carroll,	Belfast,	Northampton.
Dr. B. F. Dilliard,	East Bangor,	Northampton.
Dr. J. A. Fetherolf,	Stockertown,	Northampton.
Dr. A. S. Fox,	Easton,	Northampton.
Dr. J. L. Hornbeck,	Catasauqua (Lehigh Co.),	Northampton.
Dr. J. C. Keller,	Windgap,	Northampton.
Dr. Thomas Kern,	Bethlehem,	Northampton.
Dr. J. W. Kline,	Martins Creek,	Northampton.
Dr. H. A. Litzenberger,	Walnutport,	Northampton.
Dr. J. E. Longacre,	Northampton,	Northampton.
Dr. E. C. Miller,	East Bangor,	Northampton.
Dr. M. W. Phillips,	Chapman Quarries,	Northampton.
Dr. H. C. Pohl,	Nazareth,	Northampton.
Dr. E. W. Richards,	Easton,	Northampton.
Dr. T. W. Schwab,	Bath,	Northampton.
Dr. C. F. Stofflett,	Pen Argyle,	Northampton.
Dr. W. C. Tillman,	Easton,	Northampton.
Dr. C. A. Allison,	Elysburg,	Northumberland.
Dr. J. E. Bogar,	Millersburg (Dauphin Co.),	Northumberland.
Dr. S. S. Burg,	Northumberland,	Northumberland.
Dr. J. B. Cressinger,	Sunbury,	Northumberland.
Dr. F. S. Derr,	Watsontown,	Northumberland.
Dr. W. H. Eister,	Sunbury,	Northumberland.
Dr. L. W. Hensyl,	Green Brier,	Northumberland.
Dr. B. L. Kerchner,	Dalmatia,	Northumberland.
Dr. E. R. McDonald,	Keiser,	Northumberland.
Dr. D. M. Niple,	Turbotville,	Northumberland.
Dr. H. T. Simmonds,	Shamokin,	Northumberland.
Dr. N. M. Smith,	Riverside,	Northumberland.
Dr. R. B. Tule,	Milton,	Northumberland.
Dr. B. E. Wilkinson,	Trevorton,	Northumberland.
Dr. B. F. Beale,	Duncannon,	Perry.
Dr. C. E. DeLancy,	Newport,	Perry.
Dr. G. W. Gault,	Marysville,	Perry.
Dr. M. Gearhart,	Millerstown,	Perry.
Dr. W. H. Hoopes,	Newport,	Perry.
Dr. A. R. Johnston,	New Bloomfield,	Perry.
Dr. G. S. Kinzer,	Markelsville,	Perry.
Dr. E. O. Kistler,	Blain,	Perry.
Dr. W. G. Morris,	Liverpool,	Perry.
Dr. W. T. Morrow,	Loysville,	Perry.
Dr. J. A. Shelbley,	Shermansdale,	Perry.
Dr. M. I. Stein,	Millerstown,	Perry.
Dr. E. K. Wolff,	Ickesburg,	Perry.

School Medical Inspectors—Continued.

Name.	Residence.	County.
Dr. A. H. Catterall	Hawley (Wayne Co.),	Pike.
Dr. A. J. Simons,	Newfoundland (Wayne Co.),	Pike.
Dr. F. L. Smith	Shohola,	Pike.
Dr. L. B. Smith	Bushkill,	Pike.
Dr. E. H. Asheraft,	Coudersport,	Potter.
Dr. N. W. Church,	Ulysses,	Potter.
Dr. J. A. Dinnison,	Harrison Valley,	Potter.
Dr. H. D. Hart,	Genesee,	Potter.
Dr. L. A. Horn,	Austin,	Potter.
Dr. J. T. Hurd,	Galeton,	Potter.
Dr. D. E. Jacobs,	Oswayo,	Potter.
Dr. R. H. Jones,	Coudersport,	Potter.
Dr. F. G. Reese,	Coudersport,	Potter.
Dr. A. E. Winlack,	Shingle House,	Potter.
Dr. C. W. Bankes,	Middleport,	Schuylkill.
Dr. F. P. Barnd,	Hegins,	Schuylkill.
Dr. J. E. Beale,	Coaldale,	Schuylkill.
Dr. P. C. Boord,	Maryd,	Schuylkill.
Dr. J. F. Bryson,	Girardville,	Schuylkill.
Dr. J. J. Dailey,	McAdoo,	Schuylkill.
Dr. Harry Dechert,	Orwigsburg,	Schuylkill.
Dr. R. A. Dengler,	Delano,	Schuylkill.
Dr. M. G. Dewey,	Girardville,	Schuylkill.
Dr. T. C. Fegley,	Tremont,	Schuylkill.
Dr. R. B. Gray,	Port Carbon,	Schuylkill.
Dr. F. B. Harding,	Tamaqua,	Schuylkill.
Dr. D. J. Hawk,	Tower City,	Schuylkill.
Dr. L. D. Helm,	Schuylkill Haven,	Schuylkill.
Dr. W. H. Hinkel,	Tamaqua,	Schuylkill.
Dr. D. A. W. Huebner,	Fern Glen (Luzerne Co.),	Schuylkill.
Dr. W. D. Karterman,	Hepler,	Schuylkill.
Dr. Mary B. Kingsbury,	Pottsville,	Schuylkill.
Dr. William Lebo,	Valley View,	Schuylkill.
Dr. J. A. Lessig,	Schuylkill Haven,	Schuylkill.
Dr. Thomas McCutcheon,	Gordon,	Schuylkill.
Dr. J. F. Marshall,	Ashland,	Schuylkill.
Dr. W. H. Matten,	McKeansburg,	Schuylkill.
Dr. W. R. Rentschler,	Ringtown,	Schuylkill.
Dr. John Rhoades,	Ringtown,	Schuylkill.
Dr. L. C. Robinhold,	Auburn,	Schuylkill.
Dr. J. B. Rogers,	Pottsville,	Schuylkill.
Dr. J. T. Ryan,	St. Clair,	Schuylkill.
Dr. G. O. O. Santee,	Cressona,	Schuylkill.
Dr. J. W. Schultz,	Tremont,	Schuylkill.
Dr. N. H. Stein,	Silver Creek,	Schuylkill.
Dr. H. H. Stewart,	Friedensburg,	Schuylkill.
Dr. R. H. Stutzman,	Tower City,	Schuylkill.
Dr. C. V. Wadlinger,	Port Carbon,	Schuylkill.
Dr. F. J. Walters,	Pine Grove,	Schuylkill.
Dr. E. E. Wiesner,	Tamaqua,	Schuylkill.
Dr. C. N. Brosius,	Shamokin Dam,	Snyder.
Dr. E. R. Decker,	Selinsgrove,	Snyder.
Dr. G. E. Hassinger,	Middleburg,	Snyder.
Dr. A. J. Herman,	Middleburg,	Snyder.
Dr. R. W. Johnston,	Selinsgrove,	Snyder.
Dr. D. E. Long,	Freeburg,	Snyder.
Dr. W. W. Longacre,	Mt. Pleasant Mills,	Snyder.
Dr. J. W. Sampsell,	Penns Creek,	Snyder.
Dr. E. W. Tool,	Selinsgrove,	Snyder.
Dr. H. F. Wagenseller,	Selinsgrove,	Snyder.
Dr. U. G. Bickel,	Shanksville,	Somerset.
Dr. C. W. Frantz,	Confluence,	Somerset.
Dr. Henry Hertzler,	Jenners,	Somerset.
Dr. C. P. Large,	Meyersdale,	Somerset.
Dr. A. M. Lichty,	Elk Lick,	Somerset.
Dr. C. F. Livengood,	Boswell,	Somerset.
Dr. H. I. Marsden,	Somerset,	Somerset.
Dr. H. P. Meyers,	Confluence,	Somerset.
Dr. F. E. Sass,	Sand Patch,	Somerset.
Dr. C. T. Saylor,	Rockwood,	Somerset.
Dr. W. H. H. Schrock,	Stoyestown,	Somerset.
Dr. Fred Shaffer,	Somerset,	Somerset.
Dr. W. P. Shaw,	Berlin,	Somerset.
Dr. F. Speicher,	Rockwood,	Somerset.
Dr. H. A. Zimmerman,	Hollsopple,	Somerset.

School Medical Inspectors—Continued.

Name.	Residence.	County.
Dr. J. L. Christian,	Lopez,	Sullivan.
Dr. P. C. Biddle,	Dushore,	Sullivan.
Dr. W. B. Beaumont,	Laceyville (Wyoming Co.),	Susquehanna.
Dr. A. S. Blair,	Hallstead,	Susquehanna.
Dr. C. W. Caterson,	Franklin Forks,	Susquehanna.
Dr. W. J. Condon,	Susquehanna,	Susquehanna.
Dr. A. L. Craft,	Herrick Centre,	Susquehanna.
Dr. H. M. Fry,	Rush,	Susquehanna.
Dr. H. B. Lathrop,	Springville,	Susquehanna.
Dr. W. E. Lloyd,	Forest City,	Susquehanna.
Dr. W. W. McNamara,	Thompson,	Susquehanna.
Dr. W. W. Preston,	Montrose,	Susquehanna.
Dr. A. E. Snyder,	New Milford,	Susquehanna.
Dr. T. O. Williams,	Brooklyn,	Susquehanna.
Dr. J. G. Wilson,	Montrose,	Susquehanna.
Dr. T. A. Bair,	Sabinsville,	Tioga.
Dr. F. Castlebury,	Roaring Branch (Lycoming Co.),	Tioga.
Dr. E. E. Clark,	Knoxville,	Tioga.
Dr. D. T. Ditchburn,	Arnot,	Tioga.
Dr. J. C. Doane,	Mansfield,	Tioga.
Dr. S. A. Gaskill,	Covington,	Tioga.
Dr. C. C. Gentry,	Knoxville,	Tioga.
Dr. J. M. Gentry,	Wellsboro,	Tioga.
Dr. B. W. Genung,	Nelson,	Tioga.
Dr. E. M. Haley,	Blossburg,	Tioga.
Dr. H. C. Harkness,	Mainesburg,	Tioga.
Dr. C. W. Hazlett,	Wellsboro,	Tioga.
Dr. H. W. Howland,	Gaines,	Tioga.
Dr. F. H. Kennedy,	Middlebury Center,	Tioga.
Dr. J. H. Kiley,	Morris Run,	Tioga.
Dr. N. W. Mastin,	Wellsboro,	Tioga.
Dr. D. A. Patterson,	Westfield,	Tioga.
Dr. M. R. Pritchard,	Westfield,	Tioga.
Dr. J. C. Secor,	Westfield,	Tioga.
Dr. F. H. Shaw,	Wellsboro,	Tioga.
Dr. C. W. Sheldon,	Leetonia,	Tioga.
Dr. C. R. Smith,	Tioga,	Tioga.
Dr. L. C. Smith,	Lawrenceville,	Tioga.
Dr. W. G. Stroble,	Liberty,	Tioga.
Dr. W. D. Vedder,	Wellsboro,	Tioga.
Dr. E. L. Ward,	Osceola,	Tioga.
Dr. F. B. Brubaker,	Mifflinburg,	Union.
Dr. C. H. Dimm,	Mifflinburg,	Union.
Dr. M. L. Focht,	Lewisburg,	Union.
Dr. O. W. H. Glover,	Laurelton,	Union.
Dr. C. A. Gundy,	Lewisburg,	Union.
Dr. A. V. Persing,	Allenwood,	Union.
Dr. T. C. Thornton,	Lewisburg,	Union.
Dr. C. H. Cookson,	New Lebanon (Mercer Co.),	Venango.
Dr. P. E. Cunningham,	Clintonville,	Venango.
Dr. J. F. Davis,	Oil City,	Venango.
Dr. G. W. Dille,	Cooperstown,	Venango.
Dr. E. A. Kuhns,	Emlenton,	Venango.
Dr. F. M. McClelland,	Utica,	Venango.
Dr. H. F. McDowell,	Franklin,	Venango.
Dr. S. W. McDowell,	Pittsville,	Venango.
Dr. J. W. Monjar,	Seneca,	Venango.
Dr. J. B. Perrine,	Wesley,	Venango.
Dr. W. J. Proper,	Pleasantville,	Venango.
Dr. W. J. Richey,	Diamond,	Venango.
Dr. A. W. Ricketts,	Dempseytown,	Venango.
Dr. C. P. Snyder,	Polk,	Venango.
Dr. G. M. B. Bradshaw,	Sugar Grove,	Warren.
Dr. E. S. Briggs,	Tidioute,	Warren.
Dr. D. H. Keller,	Russell,	Warren.
Dr. J. J. Knapp,	Youngsville,	Warren.
Dr. R. C. Meals,	Columbus,	Warren.
Dr. L. D. Paige,	Spring Creek,	Warren.
Dr. C. W. Schmehl,	Warren,	Warren.
Dr. F. C. Willard,	Clarendon,	Warren.
Dr. A. N. Booth,	Bentleyville,	Washington.
Dr. F. F. Cobb,	Marianna,	Washington.
Dr. C. T. Dodd,	Washington,	Washington.

School Medical Inspectors—Continued.

Name.	Residence.	County.
Dr. B. A. Emery,	Eighty-four,	Washington.
Dr. E. E. French,	Bentleyville,	Washington.
Dr. W. J. Hawkins,	Millsboro,	Washington.
Dr. E. L. Hazlett,	West Middletown,	Washington.
Dr. J. W. Hunter,	Charleroi,	Washington.
Dr. E. J. Johnson,	Claysville,	Washington.
Dr. H. J. Kirby,	Cokeburg,	Washington.
Dr. L. G. Lutz,	Roscoe,	Washington.
Dr. D. L. McCarrell,	Hickory,	Washington.
Dr. W. C. Martin,	California,	Washington.
Dr. W. D. Martin,	Dunns Station,	Washington.
Dr. J. M. Moore,	Midway,	Washington.
Dr. J. C. Nesbit,	Burgettstown,	Washington.
Dr. L. D. Sargent,	Washington,	Washington.
Dr. W. L. Scott,	Burgettstown,	Washington.
Dr. A. R. Shuster,	Finleyville,	Washington.
Dr. H. L. Snodgrass,	Buffalo,	Washington.
Dr. J. M. Timmons,	West Alexander,	Washington.
Dr. Thomas Wallace,	Venice,	Washington.
Dr. C. B. Wood,	Monongahela,	Washington.
Dr. J. E. Bennett,	Starrucca,	Wayne.
Dr. A. H. Catterall,	Hawley,	Wayne.
Dr. F. C. Frisbie,	Equinunk,	Wayne.
Dr. E. B. Gavitte,	White Mills,	Wayne.
Dr. W. T. McConville,	Honesdale,	Wayne.
Dr. H. C. Many,	Bethany,	Wayne.
Dr. G. C. Merriman,	Lake Como,	Wayne.
Dr. O. J. Mullen,	Hamlin,	Wayne.
Dr. L. B. Nielsen,	Honesdale,	Wayne.
Dr. H. C. Noble,	Waymart,	Wayne.
Dr. A. J. Simons,	Newfoundland,	Wayne.
Dr. A. C. Voight,	Hawley,	Wayne.
Dr. H. C. White,	Ariel,	Wayne.
Dr. L. S. Aspey,	Smithton,	Westmoreland.
Dr. A. J. Bearer,	New Kensington,	Westmoreland.
Dr. George Bochm,	Arona,	Westmoreland.
Dr. G. M. Dickson,	Adamsburg,	Westmoreland.
Dr. S. P. Earnest,	Delmont,	Westmoreland.
Dr. A. E. Ewing,	Youngstown,	Westmoreland.
Dr. W. L. Fennel,	Salina,	Westmoreland.
Dr. J. D. Greaves,	New Alexandria,	Westmoreland.
Dr. Bert Haughwout,	Derry,	Westmoreland.
Dr. L. A. Heikes,	Stahlstown,	Westmoreland.
Dr. J. B. Laughrey,	Sutersville,	Westmoreland.
Dr. R. N. Lewis,	Livermore,	Westmoreland.
Dr. E. E. McAdoo,	Ligonier,	Westmoreland.
Dr. H. A. McMurray,	Youngwood,	Westmoreland.
Dr. L. M. Mitchell,	Pricedale,	Westmoreland.
Dr. C. G. Oyler,	Merwin (Apollo),	Westmoreland.
Dr. E. L. Piper,	Export,	Westmoreland.
Dr. I. M. Portser,	Greensburg,	Westmoreland.
Dr. L. J. Reese,	Bolivar,	Westmoreland.
Dr. J. Q. Robinson,	West Newton,	Westmoreland.
Dr. C. A. Shirey,	Manor,	Westmoreland.
Dr. C. M. Sloan,	Madison,	Westmoreland.
Dr. C. H. Smith,	Arnold,	Westmoreland.
Dr. C. E. Taylor,	Irwin,	Westmoreland.
Dr. H. W. Tittle,	New Florence,	Westmoreland.
Dr. D. O. Todd,	Trafford,	Westmoreland.
Dr. F. J. Bardwell,	Tunkhannock,	Wyoming.
Dr. W. B. Beaumont,	Laceyville,	Wyoming.
Dr. Albert Beilstein,	Meshoppen,	Wyoming.
Dr. V. C. Decker,	Nicholson,	Wyoming.
Dr. G. M. Harrison,	Meshoppen,	Wyoming.
Dr. G. M. Kinner,	North Mehoopany,	Wyoming.
Dr. H. L. McKown,	Tunkhannock,	Wyoming.
Dr. G. H. Rauch,	Noxen,	Wyoming.
Dr. H. O. Rohrbach,	Mill City,	Wyoming.
Dr. D. W. Sturdevant,	Laceyville,	Wyoming.
Dr. J. C. Atkins,	Red Lion,	York.
Dr. G. W. Bahn,	Spring Grove,	York.
Dr. J. R. Brodbeck,	Codorus,	York.
Dr. W. L. Crawford,	Dillsburg,	York.
Dr. O. G. Curran,	Red Lion,	York.
Dr. W. D. Danner,	Glenville,	York.

School Medical Inspectors—Continued.

Name.	Residence.	County.
Dr. O. A. Delle,	New Salem,	York.
Dr. G. M. Fickes,	Seven Valleys,	York.
Dr. E. M. Free,	Stewartstown,	York.
Dr. C. H. Gerry,	Shrewsbury,	York.
Dr. C. J. Hamme,	Dover,	York.
Dr. L. M. Hartman,	York,	York.
Dr. H. B. Hetrick,	Rossville,	York.
Dr. H. C. Hetrick,	Lewisberry,	York.
Dr. B. A. Hoover,	Wrightsville,	York.
Dr. W. H. Horning,	York,	York.
Dr. H. W. Howden,	Red Lion,	York.
Dr. J. M. Hysen,	Red Lion,	York.
Dr. T. A. Lawson,	Dallastown,	York.
Dr. W. H. McCurdy,	Delta,	York.
Dr. J. C. May,	Manchester,	York.
Dr. John Meisenhelder,	Hanover,	York.
Dr. J. C. Murphy,	York Haven,	York.
Dr. N. A. Overmiller,	East Prospect,	York.
Dr. B. F. Parker,	York,	York.
Dr. E. E. Phillips,	Etters,	York.
Dr. D. C. Posey,	Brogueville,	York.
Dr. S. J. Roberts,	Etters,	York.
Dr. W. C. Seitz,	Glen Rock,	York.
Dr. C. H. Smith,	York,	York.
Dr. W. H. Smithson,	New Park,	York.
Dr. H. D. Smyser,	York,	York.
Dr. E. S. Stambaugh,	Thomasville,	York.
Dr. L. H. Sterner,	Porters Sideling,	York.
Dr. A. C. Wentz,	Hanover,	York.
Dr. L. V. Williams,	Mt. Wolf,	York.
Dr. G. N. Yagle,	Red Lion,	York.
Dr. James Yagle,	New Freedom,	York.
Dr. W. A. Yeagy,	Dillsburg,	York.

DIVISION OF STATISTICS.

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Philadelphia.

Chief Clerk:—Elmer W. Ehler, Harrisburg, Dauphin County.
Classification Clerk:—William W. Briggs, Folsom, Delaware County.
Returns Clerk:—Elijah B. Jenkyn, Tower City, Schuylkill County.
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*Resigned. †New appointment.

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Miss Teresa Neupert, Lewistown, Mifflin County.
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*Miss Carrie Trego Tunis, Harrisburg, Dauphin County.

*Resigned. †New appointment.

LOCAL REGISTRARS—1915.

Local Registrar.	Post Office Address.	County.
C. S. Rice,	Arendtsville,	Adams.
D. P. Delap,	Bendersville,	Adams.
Charles Hafer,	Abbottstown,	Adams.
W. W. Resser,	East Berlin,	Adams.
Dr. J. E. Glenn,	Fairfield,	Adams.
Dr. Henry Stewart,	Gettysburg,	Adams.
R. A. Hartman,	Littlestown,	Adams.
Dr. G. L. Rice,	McSherrystown,	Adams.
W. R. Snyder,	New Oxford,	Adams.
Dr. C. L. Myers,	York Springs,	Adams.
J. H. Seasely,	Biglerville,	Adams.
A. J. Richards,	McKeesport,	Allegheny.
Dr. J. F. Edwards,	Pittsburgh,	Allegheny.
Dr. L. T. Mitchell,	Aspinwall,	Allegheny.
T. C. Tipper,	Avalon,	Allegheny.
Dr. J. C. Welch,	Bellevue,	Allegheny.
J. Reinehr,	Tarentum,	Allegheny.
L. L. Todd,	Braddock,	Allegheny.
S. W. Patton,	Bridgeville,	Allegheny.
R. J. Hardy,	Carnegie,	Allegheny.
Charles S. Bunting,	Cheswick,	Allegheny.
R. Titterington,	Clairton,	Allegheny.
Roland Hand,	Coraopolis,	Allegheny.
Eugene W. McCort,	Crafton,	Allegheny.
Courtney L. Whitaker,	Dravosburg,	Allegheny.
Arthur D. Pitts,	Duquesne,	Allegheny.
Dr. W. L. Henderson,	East McKeesport,	Allegheny.
Dr. A. E. Roose,	East Pittsburgh,	Allegheny.
John Mountford,	Pittsburgh, Swissvale Sta.,	Allegheny.
Dr. Robert W. Dickson,	Sta. Sewickley,	Allegheny.
E. E. Patterson,	Elizabeth,	Allegheny.
J. L. Kidd,	Emsworth,	Allegheny.
A. R. Dunbar,*	Etna,	Allegheny.
G. E. Carson,	Etna,	Allegheny.
A. W. Day,	Glassport,	Allegheny.
D. E. Kendig,	Glenfield,	Allegheny.
Addison M. Reeder,	Carnegie, R. D. No. 3,	Allegheny.
Dr. Charles O. Huff,	Homestead,	Allegheny.
H. J. Duncan,	Ingram,	Allegheny.
J. L. Rankin,	Pittsburgh,	Allegheny.
Connell Dignam,	Leetsdale,	Allegheny.
Otto A. Zange,	McKees Rocks,	Allegheny.
P. J. Bauer,	Millvale,	Allegheny.
George J. Standinger,	Mt. Oliver,	Allegheny.
Dr. A. P. Fogelman,	Munhall,	Allegheny.

Local Registrars—Continued.

Local Registrar.	Post Office Address.	County.
J. O. Jones,	Braddock,	Allegheny.
John R. McMichael,	Oakdale,	Allegheny.
Dr. W. H. Cooper,	Oakmont,	Allegheny.
John Taylor,	Sewickley,	Allegheny.
E. B. Keppel,*	Pitcairn,	Allegheny.
T. A. Russell,	Pitcairn,	Allegheny.
James W. Kelley,	Port Vue,	Allegheny.
H. L. Evans,	Rankin,	Allegheny.
Fred A. Sauer,	Pittsburgh,	Allegheny.
T. C. Rankin,	Swissvale,	Allegheny.
W. A. Gibson,	Tarentum,	Allegheny.
L. R. Sprowls,	Turtle Creek,	Allegheny.
Thomas J. Miller,	Verona,	Allegheny.
Robert S. Wilson,*	McKeesport,	Allegheny.
W. N. Waltower,	Versailles,	Allegheny.
J. M. Pollock,	Wilmerding,	Allegheny.
Walter Elder,	Wilkinsburg,	Allegheny.
Fred Dierstein,	Whitaker,	Allegheny.
O. P. Naylor,	Allison Park,	Allegheny.
Gregor Stein,	Pittsburgh, Mt. Oliver Sta.,	Allegheny.
Edward Felton,	Dormont,	Allegheny.
Fred L. Kronenerger,	Sharpsburg,	Allegheny.
Dr. Philip B. Benz, Jr.,	Carrick,	Allegheny.
A. C. McDivitt,	Wall,	Allegheny.
Dr. F. E. Herriott,	Carnegie,	Allegheny.
John A. Grady,	Hoboken,	Allegheny.
Dr. O. A. Mardorf,	Springdale,	Allegheny.
Fred Scott Cothery,	Wilson,	Allegheny.
R. E. Drummond,	West View,	Allegheny.
George M. Weaver,	Imperial,	Allegheny.
Geo. G. Plyer,	Pittsburgh,	Allegheny.
Oscar A. Loeffler,	Crafton,	Allegheny.
W. F. Pauly,	Apollo,	Armstrong.
Miss Norma Semmens,	Kittanning,	Armstrong.
A. L. McCullough,	Atwood,	Armstrong.
J. D. Coleman,	Dayton,	Armstrong.
Frank H. McNutt,	Ford City,	Armstrong.
Dr. W. L. Schnatterly,	Freeport,	Armstrong.
Harry E. Himes,	Kittanning,	Armstrong.
Dr. S. J. McMains,	Leechburg,	Armstrong.
Edward M. Shaul,	Manorville,	Armstrong.
W. J. Mildren,	Queenstown,	Armstrong.
W. W. Corett,	New Bethlehem,	Armstrong.
J. H. Alexander,	Worthington,	Armstrong.
J. Cal. George,	Elderton,	Armstrong.
J. M. White,	Mahoning,	Armstrong.
James A. Foster,	Parker's Landing,	Armstrong.
O. S. Marshall,	Rural Valley,	Armstrong.
W. H. Eynon,	Kaylor,	Armstrong.
J. E. Kinnard,	Cochran Mills,	Armstrong.
William McGarvey,	Cowansville,	Armstrong.
J. E. Stewart,	Johnetta,	Armstrong.
D. S. Keifer,	Aliquippa,	Beaver.
W. J. Blesse,*	Baden,	Beaver.
Beulah Blesse,	Baden,	Beaver.
William T. Farr,	Beaver,	Beaver.
H. M. Roberts,	Beaver Falls,	Beaver.
James L. Brown,	West Bridgewater,	Beaver.
H. M. McCoy,	Beaver Falls,	Beaver.
G. H. Young,*	Darlington,	Beaver.
Jonathan Marks,*	Darlington,	Beaver.
Miss E. Young,	Darlington,	Beaver.
Dr. George F. Mohr,	Freedom,	Beaver.
P. R. Kincaid,	Burgettstown, R. D. No. 2,	Beaver.
F. B. Golden,	New Brighton,	Beaver.
Thomas C. Glenn,	Hookstown,	Beaver.
Mrs. S. B. Hayes,	Smith's Ferry,	Beaver.
Elmer H. Fisher,	Monaca,	Beaver.
Horace L. Couch,	New Brighton,	Beaver.
R. A. Smith,	Rochester,	Beaver.
Dr. P. J. Sohn,	Economy,	Beaver.
Dr. R. S. Hensell,	Midland,	Beaver.
A. S. Dean,	Woodlawn,	Beaver.
George W. Glasser,	South Heights,	Beaver.
Dr. S. D. Sturgeon,	New Galilee,	Beaver.

Local Registrars—Continued.

Local Registrar.	Post Office Address.	County.
J. R. Irvine,	Bedford,	Bedford.
Dr. J. F. Price,	Six Mile Run,	Bedford.
E. E. Bowen,	Everett,	Bedford.
Edwin M. Painter,	Hopewell,	Bedford.
Dr. D. T. Rees,	Hyndman,	Bedford.
H. W. Holler,	Mann's Choice,	Bedford.
A. J. Crissman, Sr.,	New Paris,	Bedford.
W. A. McGregor,	Alum Bank,	Bedford.
W. B. Filler,	Rainsurg,	Bedford.
J. G. Slick,	St. Clairsville,	Bedford.
T. C. Bradley,	Saxton,	Bedford.
Dr. E. L. Smith,	Schellsburg,	Bedford.
C. W. Bulger,	Woodbury,	Bedford.
A. L. Tewell,	Chaneysville,	Bedford.
Mrs. D. C. Mundwiler,	Clearville,	Bedford.
W. G. Bortz,	Cumberland Valley,	Bedford.
Allen T. Ehst,	Bechtelsville,	Berks.
John H. Bright,	Bernville,	Berks.
Ammon Albright,	Birdsboro,	Berks.
Charles B. Spatz,	Boyertown,	Berks.
J. D. Naftzinger,	Centerport,	Berks.
Calvin H. Lengel,*	Centerport,	Berks.
Dr. Oscar T. Gehris,	Fleetwood,	Berks.
Wm. O. Heinly,	Hamburg,	Berks.
Dr. Isador L. Peters,	Kutztown,	Berks.
A. D. Kunkel,	Klinesville,	Berks.
Dr. C. D. Werley,*	Topton,	Berks.
W. H. Kline,	Topton,	Berks.
Henry Eberly,	Womelsdorf,	Berks.
Francis P. Heine,	Reading,	Berks.
I. N. Manwiller,	Mt. Penn,	Berks.
C. E. Spayd,	West Leesport,	Berks.
Thomas V. Wilson,	Wyomissing,	Berks.
Dr. M. L. Miller,	Mohnton,	Berks.
E. P. Etchberger,*	West Reading,	Berks.
H. L. Noecker,	West Reading,	Berks.
W. K. Brendle,	Shillington,	Berks.
E. S. Bower,	Oley,	Berks.
J. W. Givin,*	Bellwood,	Blair.
Ira R. Burns,	Bellwood,	Blair.
John M. Kyle,	Duncansville,	Blair.
Robert W. Smith,	Hollidaysburg,	Blair.
F. N. Dunmire,	Juniata,	Blair.
John G. Skyles,	Martinsburg,	Blair.
F. F. Holland,	Newry,	Blair.
R. A. Greene,	Roaring Springs,	Blair.
W. F. Taylor,	Tyrone,	Blair.
S. L. Isenberg,	Williamsburg,	Blair.
Samuel B. Trees,	Altoona,	Blair.
A. D. Wilson,	Alba,	Bradford.
George W. Parsons,	Athens,	Bradford.
A. P. Weldy,	Burlington,	Bradford.
W. H. Collins,	Canton,	Bradford.
Dr. G. W. Durga,	LeRaysville,	Bradford.
C. G. Summers,	Monroeton,	Bradford.
Dr. W. F. Harsherger,	New Albany,	Bradford.
Mollie W. Rice,	Rome,	Bradford.
Charles C. Yocum,	Sayre,	Bradford.
LaVerne Brown,	Waverly, N. Y.,	Bradford.
J. H. Calkins,	Sylvania,	Bradford.
Arthur P. Watson,	Towanda,	Bradford.
H. K. Mitchell,	Troy,	Bradford.
E. A. Strong,	Wyalusing,	Bradford.
C. P. Dewey,	Gillett,	Bradford.
J. H. Brelsford,	South Langhorne,	Bucks.
Jesse O. Thomas,	Bristol,	Bucks.
C. D. Hotchkiss,	Doylestown,	Bucks.
Howard Vansant,	Hulmeville,	Bucks.
J. B. Stackhouse,	Langhorne,	Bucks.
Paschal C. Hibbs,	South Langhorne,	Bucks.
Thaddeus B. Fowler,	Morrisville,	Bucks.
Thomas C. Wert,*	New Hope,	Bucks.
E. N. Dubs,	New Hope,	Bucks.
Dr. J. A. Crewitt,	Newtown,	Bucks.
I. C. Barndt,	Perkasie,	Bucks.

Local Registrars—Continued.

Local Registrar.	Post Office Address.	County.
C. William Freed,	Quakertown,	Bucks.
C. H. Rapp,	Richlandtown,	Bucks.
Hysler J. Zane,	Sellersville,	Bucks.
H. C. Hunsicker,	Silverdale,	Bucks.
Frank H. Strohm,	Telford,	Bucks.
Joshua H. Cooper,	Tullytown,	Bucks.
E. E. Yeager,	Yardley,	Bucks.
I. L. Kratz,	Bedminster,	Bucks.
Dr. S. P. McIlhatten,	Ivyland,	Bucks.
H. S. Hartzel,	Chalfont,	Bucks.
Dr. H. C. Grim,	Trumbauersville,	Bucks.
Ryan Rapp,	Riegelsville,	Bucks.
H. E. Gwinner,	Upper Black Eddy,	Bucks.
Dr. T. M. Maxwell,	Butler,	Butler.
J. H. Ramsey,*	Bruin,	Butler.
A. R. Orr,	Bruin,	Butler.
John Black,	Connoquenessing,	Butler.
Dr. R. L. Allison,	Eau Claire,	Butler.
A. Lotz,	Evans City,	Butler.
J. S. Foster,	Petrolia,	Butler.
W. G. Bassler,	Zelienople,	Butler.
Dr. W. B. Campbell,	Harrisville,	Butler.
R. J. Gaisford,	Chicora,	Butler.
Dr. George H. Mathiott,	Mars,	Butler.
G. P. Weigle,	Prospect,	Butler.
H. E. Heberling,	Portersville,	Butler.
W. D. Hoffman,	Saxonburg,	Butler.
Frances Clutton,	Slippery Rock,	Butler.
George S. Dickson,*	Valencia,	Butler.
L. E. Stoup,	Valencia,	Butler.
Dr. E. C. Thompson,*	Slippery Rock,	Butler.
J. W. Boyd,*	Slippery Rock,	Butler.
H. C. Hindman,	West Sunbury,	Butler.
Dr. Walter T. Lowry,	North Washington,	Butler.
J. F. Shannon,	Callery,	Butler.
Miss Emma Parrish,	Ashville,	Cambria.
Dr. A. F. Dunsmore,	Barnesboro,	Cambria.
G. E. Hipps,	Carrolltown,	Cambria.
C. H. Perry,	Chest Springs,	Cambria.
A. C. Hipp,	Johnstown,	Cambria.
Joseph R. Hummel,	Johnstown,	Cambria.
C. W. Davis,	Conemaugh,	Cambria.
Oliver Evans,	Ebensburg,	Cambria.
H. E. Shaffer,	Johnstown, R. D. No. 4,	Cambria.
Paul H. McCleester,	Conemaugn,	Cambria.
Paul Ferguson,	Gallitzin,	Cambria.
A. G. Neff,	Hastings,	Cambria.
James Biter,	Loretto,	Cambria.
Dr. S. W. Worrell,	Patton,	Cambria.
William Sparks,*	Portage,	Cambria.
Charles Patterson,	Portage,	Cambria.
D. T. Edwards,	Johnstown,	Cambria.
J. M. Miller,	Scalp Level,	Cambria.
Benjamin Cawthern,	South Fork,	Cambria.
A. P. Wyland,	Spangler,	Cambria.
Dr. C. B. Jones,	Summerhill,	Cambria.
H. S. Huey,	Gallitzin,	Cambria.
Louis Beiter,	Wilmore,	Cambria.
J. Troxell,	Glasgow,	Cambria.
L. H. Davis,*	Vintondale,	Cambria.
S. R. Williams,	Vintondale,	Cambria.
John A. Leap,	Lilly,	Cambria.
Dr. J. A. Lynch,	Cresson,	Cambria.
Edward V. Boley,	Cresson,	Cambria.
J. H. Sanders,	Cassandra,	Cambria.
William Lebzelter,	Johnstown,	Cambria.
H. B. Mutthersbough,	Driftwood,	Cameron.
Frank G. Judd,	Emporium,	Cameron.
John F. Cole,	Beaver Meadows,	Carbon.
Theodore Lindemuth,	East Mauch Chunk,	Carbon.
George W. Fisher,	Whitehaven,	Carbon.
James E. Davis,	Lansford,	Carbon.
Mrs. J. P. Smith,	Lehighton,	Carbon.
Robert A. Heberling,	Mauch Chunk,	Carbon.
Dr. E. F. Eshleman,	Parryville,	Carbon.

Local Registrars—Continued.

Local Registrar.	Post Office Address.	County.
Robert M. Forrest,	Summit Hill,	Carbon.
J. E. Rosenstock,	Weatherly,	Carbon.
W. H. Strausberger,	Weissport,	Carbon.
F. A. Seip,	Palmerton,	Carbon.
Miss Alice P. Tate,	Bellefonte,	Centre.
Dr. J. R. G. Allison,	Center Hall,	Centre.
W. H. Holter,	Howard,	Centre.
P. H. Haupt,	Millesburg,	Centre.
P. H. Musser,	Millheim,	Centre.
Thomas G. McCausland,	Philipsburg,	Centre.
J. B. Hoffman,	Philipsburg,	Centre.
Irving L. Foster,	State College,	Centre.
B. W. Shipley,*	Fleming,	Centre.
Miss M. E. Shipley,	Fleming,	Centre.
W. A. Sickel,	Snow Shoe,	Centre.
J. F. Reynolds,	Atglen,	Chester.
William C. Mackey,	Avondale,	Chester.
Dr. H. E. Williams,	Coatesville,	Chester.
Dr. H. Y. Pennell,	Downingtown,	Chester.
S. M. Lemmon,	Honeybrook,	Chester.
Joseph R. Strickland,	Oxford,	Chester.
F. T. MacDonald,	Kennett Square,	Chester.
Mrs. E. R. Hoffman,	Malvern,	Chester.
Samuel Jackson,	Parkesburg,	Chester.
I. E. Miller,	Phoenixville,	Chester.
Dr. J. C. Mewhinney,	Spring City,	Chester.
Dr. C. E. Woodward,	West Chester,	Chester.
Augustus Yarnall,	West Grove,	Chester.
Maurice S. Lord,	Pottstown, R. D.,	Chester.
Dr. N. M. Meals,	Callensburg,	Clarion.
Gertrude Lawson,	Clarion,	Clarion.
Dr. G. B. Woods,	Curllsville,	Clarion.
Dr. R. J. Greer,	East Brady,	Clarion.
Dr. O. G. Moore,	Knox,	Clarion.
F. C. Corebtt,	New Bethlehem,	Clarion.
Dr. C. W. Hoffman,	Rimersburg,	Clarion.
J. S. Craig,	St. Petersburg,	Clarion.
William Hack,	Shippenville,	Clarion.
F. C. McEwen,	Sligo,	Clarion.
J. J. Wolfe,	Hawthorn,	Clarion.
Joseph Neuland,	Lucinda,	Clarion.
William R. Jones,	Brisbin,	Clearfield.
H. C. Conner,	Burnside,	Clearfield.
Hiram Shultz,	Philipsburg,	Clearfield.
W. A. Hagerty,	Clearfield,	Clearfield.
F. X. Spangle,	Coalport,	Clearfield.
W. P. Tate,	Curwensville,	Clearfield.
Dr. W. J. Smathers,*	DuBois,	Clearfield.
Frank Hutton,	DuBois,	Clearfield.
O. M. Semple,	Glen Hope,	Clearfield.
W. E. Derrick,	Grampian,	Clearfield.
John Scollins,	Houtzdale,	Clearfield.
S. K. Ames,	Irvona,	Clearfield.
S. C. Kirk,	Lumber City,	Clearfield.
B. H. Bell,	Mahaffey,	Clearfield.
R. C. Markle,	Ladfos,	Clearfield.
Adam Breth,*	New Washington,	Clearfield.
John W. Gallagher,	New Washington,	Clearfield.
W. W. Boone,	Osceola Mills,	Clearfield.
H. E. Wagner,	Rainey,	Clearfield.
George J. Weber,	Troutville,	Clearfield.
J. B. McKee,	Westover,	Clearfield.
W. L. Hoffman,	Morrisdale Mines,	Clearfield.
H. L. Jones,	Kylertown,	Clearfield.
P. W. Gillespie,	Karthaus,	Clearfield.
Mrs. Elizabeth McDonald,	Penfield,	Clearfield.
S. W. Gardner,	Beech Creek,	Clinton.
J. C. Weaver,	Flemington,	Clinton.
W. C. Berry,	Logan Mill,	Clinton.
R. Jay Kreamer,	Mill Hall,	Clinton.
J. E. Leibfer,	Renovo,	Clinton.
John J. Dempsey,	Renovo,	Clinton.
A. G. Calhoun,	Easterly Fork,	Clinton.

Local Registrars—Continued.

Local Registrar.	Post Office Address.	County.
William A. Russell,	Keating,	Clinton.
Mrs. Faye Sloan,*	Lock Haven,	Clinton.
Mrs. S. B. Packer,	Lock Haven,	Clinton.
O. K. Miller,	Avis,	Clinton.
F. L. Klase,	Benton,	Columbia.
W. C. Vought,	Berwick,	Columbia.
Robert M. Graham,	Catawissa,	Columbia.
Mary Walshe,	Centralia,	Columbia.
Dr. S. B. Arment,	Bloomsburg,	Columbia.
J. Leon Cole,	Millville,	Columbia.
A. E. Patterson,	Orangeville,	Columbia.
A. B. McHenry,	Stillwater,	Columbia.
Eugene Sweeney,	Berwick,	Columbia.
Dr. S. J. Dickey,	Blooming Valley,	Crawford.
H. E. Carringer,	Cambridge Springs,	Crawford.
T. J. Patten,	Centerville,	Crawford.
Dr. John L. Axtell,	Cochranton,	Crawford.
Dr. H. L. Brush,	Conneaut Lake,	Crawford.
Dr. A. H. Cartright,	Conneautville,	Crawford.
G. H. Walp,	Geneva,	Crawford.
Dr. S. F. Hazen,	Hartstown,	Crawford.
C. E. Aikin,	Hydetown,	Crawford.
E. W. Spackman,	Linesville,	Crawford.
H. D. Oles,	Riceville,	Crawford.
Allison Mook,	Saegertown,	Crawford.
Dr. E. E. Maitland,	Spartansburg,	Crawford.
Dr. J. W. Greenfield,	Springboro,	Crawford.
Dr. George W. Ellison,	Townville,	Crawford.
Dr. Robert W. Clark,	Venango,	Crawford.
Dr. Henry M. Daniels,	Woodcock,	Crawford.
Dr. John K. Roberts,	Meadville,	Crawford.
Robert A. Kerr,	Titusville,	Crawford.
Willard C. Waid,	Guys Mills,	Crawford.
James W. Milhouse,	Camp Hill,	Cumberland.
C. M. Musselman,	Lemoyne,	Cumberland.
Albert Wiener,	Carlisle,	Cumberland.
M. E. Anderson,	Mechanicsburg,	Cumberland.
C. Harman,	Mt. Holly Springs,	Cumberland.
G. G. Guistwhite,	New Cumberland,	Cumberland.
D. T. Ramsey,	Newburg,	Cumberland.
Dr. W. B. Reynolds,	Newville,	Cumberland.
D. S. Shulenberger,	Shippensburg,	Cumberland.
W. W. Braught,	Shiremanstown,	Cumberland.
Mrs. S. S. Bear,	Wormleysburg,	Cumberland.
Rev. A. G. Wolf,	West Fairview,	Cumberland.
J. W. Hartman,*	Berrysburg,	Dauphin.
Morris S. Daniel,	Berrysburg,	Dauphin.
R. M. Steckley,	Dauphin,	Dauphin.
A. M. Romberger,	Elizabethville,	Dauphin.
Frank E. Hartman,	Gratz,	Dauphin.
J. B. Brubaker,	Halifax,	Dauphin.
George T. Ricker,	Hummelstown,	Dauphin.
J. J. John,	Lykens,	Dauphin.
W. J. Kennard,	Middletown,	Dauphin.
J. M. Hecker,	Millersburg,	Dauphin.
Dr. J. B. Zeigler,	Penbrook,	Dauphin.
E. H. Kling,	Royalton,	Dauphin.
Dr. J. M. Peters,	Steelton,	Dauphin.
W. E. Knorr,	Pillow,	Dauphin.
William Blanning,	Williamstown,	Dauphin.
D. H. Ellinger,	Harrisburg,	Dauphin.
Garrett H. Kline,*	Highspire,	Dauphin.
Josiah Cover,	Highspire,	Dauphin.
G. T. Macfarland,	Aldan,	Delaware.
Wm. A. Jordan,	Clifton Heights,	Delaware.
Ellsworth Armstrong,	Collingdale,	Delaware.
P. R. K. Martin,	Colwyn,	Delaware.
C. H. Drewes,	Darby,	Delaware.
Frank J. Kerr,	Eddystone,	Delaware.
Robert R. Cromie,	Glenolden,	Delaware.
Thomas G. Janvier,	Lansdowne,	Delaware.
William Peehman,	Marcus Hook,	Delaware.
Benjamin T. Lewis,	Media,	Delaware.
E. B. Greenwood,	Morton,	Delaware.

Local Registrars—Continued.

Local Registrar.	Post Office Address.	County.
F. H. Bassett,	Norwood,	Delaware.
J. L. Galloway,	Moores,	Delaware.
Dr. H. F. Taylor,	Ridley Park,	Delaware.
Dr. E. S. Haines,	Rutledge,	Delaware.
Edwin Bromfield,	Sharon Hill,	Delaware.
E. P. Patterson,	Swarthmore,	Delaware.
James Miller,	Upland,	Delaware.
Edward W. Pierce,	Yeadon,	Delaware.
John C. MacDowell,	Chester,	Delaware.
B. D. Eldridge,*	Brandywine Summit,	Delaware.
Isaac Watkins,	Brandywine Summit,	Delaware.
Thomas J. Ralston, Jr.,	Millbourne,	Delaware.
William E. Griffith,	Glen Riddle,	Delaware.
Dr. I. B. Roberts,	Llanerch,	Delaware.
F. W. Shoemaker,	East Lansdowne,	Delaware.
J. M. Fronefield,	Wayne,	Delaware.
George Younger, Sr.,	Johnsonburg,	Elk.
James Penfield,*	Ridgway,	Elk.
James M. Hanscom,	Ridgway,	Elk.
Dr. W. M. Black,	St. Marys,	Elk.
W. H. Weed,	Weedville,	Elk.
Joseph F. Metts,	Hallton,	Elk.
A. S. Horton,	Brockport,	Elk.
Daniel Phalen,*	Brockport,	Elk.
James C. Henning,	Kane, R. D. No. 2,	Elk.
Dr. G. M. Hutchison,	Dagus Mines,	Elk.
Dr. J. M. Peters,	Albion,	Erie.
J. H. Bennett,	Edinboro,	Erie.
J. H. Dean,	Elgin,	Erie.
Dr. J. W. Wright,	Erie,	Erie.
J. H. Taylor,*	Fairview,	Erie.
Geo. H. Hauck,	Fairview,	Erie.
Herold C. Hull,	Girard,	Erie.
Wilbur A. Tyler,	Platea,	Erie.
Everett Steadman,	McKean,	Erie.
C. J. Runnels,	Mill Village,	Erie.
C. D. Videtto,	Northeast,	Erie.
C. F. Miller,	East Springfield,	Erie.
D. B. Honeywell,*	Union City,	Erie.
John Tyndall,	Union City,	Erie.
A. N. Dennington,	Waterford,	Erie.
Charles Hitchcock,	Wattsburg,	Erie.
Dr. G. A. Elston,	Corry,	Erie.
L. M. Truxal,	Bellevernon,	Fayette.
Dr. Alfred C. Smith,	South Brownsville,	Fayette.
Dr. L. N. Reichard,	Brownsville,	Fayette.
Alexander B. Hood,	Connellsville,	Fayette.
J. Allen Crawford,	Dawson,	Fayette.
David Williams,	Dunbar,	Fayette.
Dr. R. T. Gribble,	Fairchance,	Fayette.
J. M. Thirkield,*	Fayette City,	Fayette.
Robert Williams,	Fayette City,	Fayette.
Silvanus Thomas,	Markleysburg,	Fayette.
W. G. Sharpnack,	Masontown,	Fayette.
Radcliffe Weir,	Ohiopyle,	Fayette.
W. S. Dillinger,	Point Marion,	Fayette.
R. S. Burchinal,	Smithfield,	Fayette.
H. W. Franks,	Uniontown,	Fayette.
Robert Gove,	Everson,	Fayette.
Burt Marshall,	South Connellsville,	Fayette.
B. C. Slocum,	Perryopolis,	Fayette.
Thomas F. Ritchey,	Tionesta,	Forest.
H. A. Shipe,	Marienville,	Forest.
William Silzle, Jr.,	Kellettville,	Forest.
Mrs. George Cuthbertson,*	Lynch,	Forest.
O. E. Rupert,	Truemans,	Forest.
Dr. H. M. Miley,	Chambersburg,	Franklin.
C. H. Clippinger,	Greencastle,	Franklin.
Dr. D. B. Grosh,	Mercersburg,	Franklin.
Dr. Thomas D. White,	Orrstown,	Franklin.
Alfred N. Russell,	Waynesboro,	Franklin.
D. F. McCurdy,	Fannettsburg,	Franklin.

Local Registrars—Continued.

Local Registrar.	Post Office Address.	County.
George W. Hays,	McConnellsburg,	Fulton.
J. E. Palmer,	Warfordsburg,	Fulton.
Geo. F. Metzler,	Harrisonville,	Fulton.
N. G. Cunningham,	New Grenada,	Fulton.
M. P. Barton,	Emmaville,	Fulton.
George M. Condit,	Carmichaels,	Greene.
Dr. A. L. Eddy,	Greensboro,	Greene.
D. P. Bell,	Jefferson,	Greene.
D. K. Fox,	Mt. Morris,	Greene.
Z. C. Ragan,	Waynesburg,	Greene.
T. G. Phillips,*	New Freeport,	Greene.
Wilson Bissett,	Deep Valley,	Greene.
Alexander Alfree,	Rices Landing,	Greene.
Silas Durbin,	Wind Ridge,	Greene.
G. B. Murdock,	Clarksville,	Greene.
Thomas G. Estep,	Alexandria,	Huntingdon.
William H. Lyons,	Birmingham,	Huntingdon.
Silas Cutshall,	Broadtop,	Huntingdon.
Myron McClain,	Cassville,	Huntingdon.
H. L. G. Lytle,	Coalmont,	Huntingdon.
Isaac N. Horton,	Dudley,	Huntingdon.
William L. Johnston,	Huntingdon,	Huntingdon.
H. H. Swope,	Mapleton Depot,	Huntingdon.
Irvin Brumbaugh,	Marklesburg,	Huntingdon.
George W. Lukens,	Mount Union,	Huntingdon.
S. B. Shenefelt,	Rockhill Furnace,	Huntingdon.
Dr. Charles Campbell,	Petersburg,	Huntingdon.
J. A. Stevens,*	Three Springs,	Huntingdon.
T. A. Weight,	Three Springs,	Huntingdon.
Mrs. J. M. Fleming,*	Blairs Mills,	Huntingdon.
Paul Kling,*	Shade Gap,	Huntingdon.
Mrs. Margaret Montgomery,	Shade Gap,	Huntingdon.
J. M. Lutz,	Shirleysburg,	Huntingdon.
George W. Mitchell,	McAlevy's Fort,	Huntingdon.
H. M. Elliott,	Armagh,	Indiana.
J. P. Archibald,	Blairsville,	Indiana.
Dr. J. H. Peterman,	Grant,	Indiana.
W. J. Smith,	Glen Campbell,	Indiana.
S. W. Uber,	Homer City,	Indiana.
J. H. Hill,	Indiana,	Indiana.
T. M. Graham,	Kent,	Indiana.
Moses T. Steele,	Marion Center,	Indiana.
W. H. Davis,	Brush Valley,	Indiana.
John W. Graves,	Saltsburg,	Indiana.
Dr. Thomas M. Carnahan,*	Shelocta,	Indiana.
Henry Sheaffer,	Shelocta,	Indiana.
R. C. Robinson,	Smicksburg,	Indiana.
Elisha Green,	Plumville,	Indiana.
C. E. Faust,	Clymer,	Indiana.
J. Clark Speedy,*	Creekside,	Indiana.
John Brown,*	Creekside,	Indiana.
W. C. McElhose,	Creekside,	Indiana.
Dr. E. Q. McHenry,	Creekside,	Indiana.
J. M. Thompson,	Big Run,	Jefferson.
Dr. R. O. Moorhead,	Brockwayville,	Jefferson.
C. P. O'Loughlin,	Brookville,	Jefferson.
Harry T. Jones,	Corsica,	Jefferson.
George L. Glenn,	Punxsutawney,	Jefferson.
Perry B. Love,	Reynoldsville,	Jefferson.
Dr. W. W. Carrier,	Summerville,	Jefferson.
Amos Holben,	Worthville,	Jefferson.
Dr. J. Frank Raine,	Sykesville,	Jefferson.
Harry Truman,	Sigel,	Jefferson.
F. W. Covert,	Falls Creek,	Jefferson.
Frank Stockdale,	North Point,	Jefferson.
Dr. D. M. Crawford,	Mifflintown,	Juniata.
Dr. B. F. Long,	Mifflin,	Juniata.
A. B. Heckerman,	Port Royal,	Juniata.
W. H. Brubaker,	Thompsontown,	Juniata.
Dr. R. M. Quig,	East Waterford,	Juniata.
P. J. Kearney,	Archbald,	Lackawanna.
Walter L. Thompson,*	Peckville,	Lackawanna.
W. J. Bonner,	Peckville,	Lackawanna.

Local Registrars—Continued.

Local Registrar.	Post Office Address.	County.
J. H. Wehr,	Dalton,	Lackawanna.
Ignatz Gutknecht,	Priceburg,	Lackawanna.
P. H. Cooney,	Dunmore,	Lackawanna.
Avery Van Campen,	Elmhurst,	Lackawanna.
Willis Northrup,	Glenburn,	Lackawanna.
Dr. J. W. Knedler,	Moscow,	Lackawanna.
Dr. Sumner D. Davis,	Jermyn,	Lackawanna.
George Sisson,	Factoryville,	Lackawanna.
George Buckingham,	Mayfield,	Lackawanna.
Charles F. Akens,	Moosic,	Lackawanna.
John J. Carbine,	Olyphant,	Lackawanna.
Antonio Biancardi,	Old Forge,	Lackawanna.
Evan G. Evans,	Taylor,	Lackawanna.
M. J. McGowan,	Throop,	Lackawanna.
William Painter, Jr.,	Vandling,	Lackawanna.
Dr. N. C. Mackey,	Waverly,	Lackawanna.
Cornelius F. Eggleston,	Peckville,	Lackawanna.
Horace G. Likeley,	Carbondale,	Lackawanna.
Robert M. Heaney,	Scranton,	Lackawanna.
Theodore A. Zeiler,	Winmers,	Lackawanna.
Dr. R. S. Schweitzer,	Adamstown,	Lancaster.
C. B. Zwally,	Akron,	Lancaster.
Henry B. Clepper,	Columbia,	Lancaster.
C. G. Reese,	Elizabethtown,	Lancaster.
F. S. Klinger,	Ephrata,	Lancaster.
Jacob B. Young,	Lititz,	Lancaster.
Dr. J. S. Beamsderfer,	Manheim,	Lancaster.
H. C. Windolph,	Marietta,	Lancaster.
John E. Hoffer,	Mt. Joy,	Lancaster.
Dr. J. A. Hoffman,	New Holland,	Lancaster.
J. Allan Kirk,	Quarryville,	Lancaster.
Dr. George E. Day,	Strasburg,	Lancaster.
Dr. W. G. Binkley,	Washingtonboro,	Lancaster.
Dr. J. M. Shartle,	Lancaster,	Lancaster.
Emory Dornbach,	Denver,	Lancaster.
Dr. G. W. H. Frew,	Paradise,	Lancaster.
Dr. L. K. Leslie,	Bareville,	Lancaster.
Oscar H. Moore,	Christiana,	Lancaster.
W. S. Martin,	Mountville,	Lancaster.
James Lichty,	Terre Hill,	Lancaster.
H. E. McClymonds,	Ellwood City,	Lawrence.
E. H. Slemmons,*	Enon Valley,	Lawrence.
S. D. Slemmons,*	Enon Valley,	Lawrence.
R. W. Watt,	Enon Valley,	Lawrence.
Dr. G. N. Mealy,	New Wilmington,	Lawrence.
C. C. Horner,	New Castle,	Lawrence.
F. B. Moorhead,	Volant,	Lawrence.
J. Dindinger,	Wampum,	Lawrence.
William H. Lentz,	Jonestown,	Lebanon.
Dr. A. W. Gernert,	Myerstown,	Lebanon.
S. F. Engle,	Palmyra,	Lebanon.
W. H. H. Smith,	Annville,	Lebanon.
E. L. Kreider,	Lebanon,	Lebanon.
U. S. G. Steinmetz,	Richland,	Lebanon.
Elmer E. Steiner,*	Richland,	Lebanon.
Austin A. Glick,	Catasauqua,	Lehigh.
Ray A. Young,	Coopersburg,	Lehigh.
R. W. Gangewere,*	Emaus,	Lehigh.
H. R. Kline,	Emaus,	Lehigh.
Daniel Reed,	South Bethlehem,	Lehigh.
O. P. Knauss,	Macungie,	Lehigh.
John W. Roberts,	Slatington,	Lehigh.
William H. Yoder,	Trexlertown,	Lehigh.
Neil J. McCafferty,	Allentown,	Lehigh.
P. Z. Kramer,	Coplay,	Lehigh.
Oliver F. Bortz,	South Allentown,	Lehigh.
R. D. Delong,	Alburtis,	Lehigh.
S. E. Wells,	Ashley,	Luzerne.
Iago Jones,*	Ashley,	Luzerne.
John Fraley,	Courtdale,	Luzerne.
James C. Johnson,	Avoca,	Luzerne.
Will Norton,	Dallas,	Luzerne.
H. L. Poust,	Dorranceton,	Luzerne.
J. R. Hatten,	Edwardsdale,	Luzerne.

Local Registrars—Continued.

Local Registrar.	Post Office Address.	County.
Michael Hayes,	Pittston,	Luzerne.
H. H. Hadsall,	Forty Fort,	Luzerne.
J. B. Hanlon,	Freeland,	Luzerne.
J. F. Schmaltz,*	Pittston,	Luzerne.
John Ruane,	Hughestown,	Luzerne.
W. W. Hindennach,	Jeddo,	Luzerne.
Albert E. Miller,	Kingston,	Luzerne.
Dr. John Hislop,	Miners Mills,	Luzerne.
Fred H. Gates,	Wilkes-Barre,	Luzerne.
Robert J. Blair,	Luzerne,	Luzerne.
Anthony Werth,	Nanticoke,	Luzerne.
John G. Myers,	Nescopeck,	Luzerne.
I. J. Jamison,	New Columbus,	Luzerne.
Thomas Golightly,	Parsons,	Luzerne.
Dr. Charles L. Ashley,	Plymouth,	Luzerne.
J. B. Anderson,	Shickshinny,	Luzerne.
Michael Ginley,	Sugar Notch,	Luzerne.
Henry E. Miller,	Maltby,	Luzerne.
James Walker,	Peely,	Luzerne.
George F. Krapf,	Hazleton,	Luzerne.
W. L. Hartman,	Pittston,	Luzerne.
H. S. Townend,	Wyoming,	Luzerne.
Frank F. Baetz,	Whitehaven,	Luzerne.
Stephen J. Hughes,	Hazleton,	Luzerne.
W. J. McAndrews,	Pittston,	Luzerne.
Dr. A. J. Baker,	Duryea,	Luzerne.
J. D. Getting,	Conyngham,	Luzerne.
M. B. Comerford,	Plymouth,	Luzerne.
William S. Carson,	DuBoistown,	Lycoming.
C. F. Johnson,	Hughesville,	Lycoming.
Charles B. Seely,	Jersey Shore,	Lycoming.
Simon J. Bardo,	Montgomery,	Lycoming.
David Updegraff,	Montoursville,	Lycoming.
Dr. T. Kennett Wood,	Muncy,	Lycoming.
R. M. Clark,	Picture Rocks,	Lycoming.
Lawrence Thomas,	Salladasburg,	Lycoming.
Amasa O. Ball,	Williamsport, Sta. 5,	Lycoming.
John J. Halloran,	Ralston,	Lycoming.
William H. McInroy,	Slate Run,	Lycoming.
R. B. Staver,	Williamsport,	Lycoming.
J. H. Coon,*	Eldred,	McKean.
William Harler,	Eldred,	McKean.
J. L. Coon,*	Eldred,	McKean.
C. W. Evans,	Kane,	McKean.
A. O. Downey,	Mt. Jewett,	McKean.
Dr. H. L. McCoy,	Smethport,	McKean.
C. W. Bishop,	Port Allegany,	McKean.
William Roedel,	Bradford,	McKean.
F. R. Kay,	Clark,	Mercer.
Henry W. Redfoot,	Fredonia,	Mercer.
Harry L. Keck,	Greenville,	Mercer.
Ira C. Black,	Grove City,	Mercer.
R. B. Donaldson,	Jackson Center,	Mercer.
J. M. Campbell,	Mercer,	Mercer.
L. G. Overmoyer,	New Lebanon,	Mercer.
O. L. Mook,*	New Lebanon,	Mercer.
Dr. J. C. Cooley,	Sandy Lake,	Mercer.
W. Whitehead,	Sharon,	Mercer.
W. A. Graber,	Sharpsville,	Mercer.
Dr. J. C. Bachop,	Sheakleyville,	Mercer.
Dr. D. B. Hanna,	Stoneboro,	Mercer.
Mrs. S. R. Pettitt,	West Middlesex,	Mercer.
George A. Stambaugh,	Wheatland,	Mercer.
A. T. Havell,	Farrell,	Mercer.
Free R. McElhaney,	Jamestown,	Mercer.
H. H. Laub, Jr.,	Lewistown,	Mifflin.
W. F. Roche,	McVeytown,	Mifflin.
B. E. Zerby,	Allensville,	Mifflin.
Ira H. Wilison,	Newton Hamilton,	Mifflin.
Dr. William H. Kohler,	Milroy,	Mifflin.
William A. Creighton,	Burnham,	Mifflin.
John J. Burd,	Delaware Gap,	Monroe.
Harry E. Smith,	East Stroudsburg,	Monroe.
A. H. Schoonover,	Stroudsburg,	Monroe.

Local Registrars—Continued.

Local Registrar.	Post Office Address.	County.
M. L. Serfass,	Brodheadsville,	Monroe.
Harry C. Rowe,	Mt. Pocono,	Monroe.
Elmer Singer,	Tannersville,	Monroe.
H. V. Everham,	Ambler,	Montgomery.
Willis D. Bare,	Bridgeport,	Montgomery.
Sallie E. Faringer,	Collegeville,	Montgomery.
William Neville,	Conshohocken,	Montgomery.
L. Y. Meschter,	East Greenville,	Montgomery.
Henry A. Summers,	Green Lane,	Montgomery.
Reuben Hockman,	Hatboro,	Montgomery.
Dr. L. L. Cope,	South Hatfield,	Montgomery.
Charles D. Wright,	Jenkintown,	Montgomery.
Dr. J. W. Bauman,	Lansdale,	Montgomery.
A. P. Redifer,	Narberth,	Montgomery.
Charles E. White,	Norristown,	Montgomery.
H. S. Swartley,	North Wales,	Montgomery.
George W. Welker,	Pennsburg,	Montgomery.
John B. Evans,*	Pottstown,	Montgomery.
Jesse R. Evans,	Pottstown,	Montgomery.
Fred S. Morris,	Rockledge,	Montgomery.
Clarence O. Grander,	Royersford,	Montgomery.
F. A. Bunting,	Souderton,	Montgomery.
F. R. Rushong,	Trappe,	Montgomery.
J. Rufus Barr,	West Conshohocken,	Montgomery.
Linford G. Knipe,	West Telford,	Montgomery.
Edwin L. Miller,	Schwenksville,	Montgomery.
H. X. Dougherty,	Red Hill,	Montgomery.
George C. Anderson,	Ardmore,	Montgomery.
Dr. Cameron Shultz,	Danville,	Montour.
W. R. Robinson,	Washingtonville,	Montour.
Emanuel L. Flory,	Bangor,	Northampton.
James K. Worman,	Bath,	Northampton.
J. M. Leibert,	Bethlehem,	Northampton.
Roscoe H. Smith,	Chapman Quarries,	Northampton.
Harrison Fox,	East Bangor,	Northampton.
William J. Gross,	Freemansburg,	Northampton.
O. F. Kelchner,	Easton,	Northampton.
Elmer A. Eckert,	Hellertown,	Northampton.
Dr. J. A. Fraunfelder,	Nazareth,	Northampton.
Mrs. Mary C. Swartz,	Pen Argyl,	Northampton.
Dr. Charles E. Beck,	Portland,	Northampton.
Silas B. Keener,	South Bethlehem,	Northampton.
Francis W. Messinger,	Tatamy,	Northampton.
William Longley,	Easton, Sta. 1,	Northampton.
C. A. Daniel,	Wind Gap,	Northampton.
J. H. Warner,	Easton,	Northampton.
Henry E. Woodring,	Stockertown,	Northampton.
F. H. Stettler,	Northampton,	Northampton.
Edward Weaver,	South Bethlehem,	Northampton.
N. J. Steinhilber,	Catasauqua,	Northampton.
O. J. Kleintop,	Walnutport,	Northampton.
George B. Wesner,	McEwensville,	Northumberland.
Dr. J. A. Clinger,	Milton,	Northumberland.
P. W. Hoffman,	Mount Carmel,	Northumberland.
Dr. Soddard S. Burg,	Northumberland,	Northumberland.
R. B. Bird,	Riverside,	Northumberland.
T. C. Roberts,	Shamokin,	Northumberland.
Perry C. Klase,	Snydertown,	Northumberland.
B. F. Heckert,	Sunbury,	Northumberland.
E. L. Lyons,	Turbotville,	Northumberland.
Dr. W. G. Marsh,	Watsontown,	Northumberland.
D. E. Baum,	Herndon,	Northumberland.
Dr. J. S. Mengel,	Trevorton,	Northumberland.
George P. Heck,	Keiser,	Northumberland.
Reuben H. Kell,	Blain,	Perry.
D. C. Kell,	New Bloomfield,	Perry.
David Boyd,	Duncannon,	Perry.
D. B. Dromgold,	Landisburg,	Perry.
Dr. William G. Morris,	Liverpool,	Perry.
Dr. E. W. Snyder,	Marysville,	Perry.
James Rounsley,	Millerstown,	Perry.
Amos A. Ober,	New Buffalo,	Perry.
Frank H. Zinn,	Newport,	Perry.
Harvey A. Johnson,	Ickesburg,	Perry.

Local Registrars—Continued.

Local Registrar.	Post Office Address.	County.
Neva R. Deardorff,*	Philadelphia,	Philadelphia.
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John W. Kilsby,	Dingman's Ferry,	Pike.
A. W. Balch,	Matamoras,	Pike.
B. F. Killam,	Paupack,	Pike.
J. E. Dodan,	Lackawaxen,	Pike.
George W. Sterner,	Austin,	Potter.
Roy L. Orcutt,	Coudersport,	Potter.
E. M. Dickinson,	Galeton,	Potter.
Homer K. Lane,	Ulysses,	Potter.
Russell Wilson,*	Cross Fork,	Potter.
E. L. Caldwell,	Cross Fork,	Potter.
F. P. Nichols,	Shinglehouse,	Potter.
Mrs. Emma E. Courtright,	Genesee,	Potter.
Fred H. Hoose,	Roulette,	Potter.
Harry Payne,*	Oswayo,	Potter.
A. G. Wells,*	Oswayo,	Potter.
G. M. Corwin,	Oswayo,	Potter.
John F. Dence,	Ashland,	Schuylkill.
Frank L. Brown,	Auburn,	Schuylkill.
J. W. Smith,	Cressona,	Schuylkill.
Maurice Heywood,	Frackville,	Schuylkill.
John J. Moran,	Mahanoy Plane,	Schuylkill.
Dr. W. J. Monaghan,	Girardville,	Schuylkill.
W. S. Drumheller,	Landingville,	Schuylkill.
Dr. L. G. Wetterau,	McAdoo,	Schuylkill.
James H. Kirchner,	Mahanoy City,	Schuylkill.
J. Nelson Bassler,	Middleport,	Schuylkill.
John H. Philips,	Minersville,	Schuylkill.
Dr. H. J. Herbein,	Pottsville,	Schuylkill.
P. S. Canfield,	Silvercreek,	Schuylkill.
Dr. George S. Marbarger,	New Ringgold,	Schuylkill.
W. H. Edwards,	Orwigsburg,	Schuylkill.
F. J. O'Connor,	Pottsville,	Schuylkill.
Harry W. Boltz,	Pine Grove,	Schuylkill.
George W. Runkle,	Port Carbon,	Schuylkill.
Harry W. Brown,	St. Clair,	Schuylkill.
C. A. Moyer,	Schuylkill Haven,	Schuylkill.
Thornton M. Stout,	Shenandoah,	Schuylkill.
Jessie R. Little,	Tamaqua,	Schuylkill.
W. F. Knecht,	Tower City,	Schuylkill.
Dr. J. W. Schultz,	Tremont,	Schuylkill.
W. F. Horn,	Sheppton,	Schuylkill.
Guy Hubler,	Gordon,	Schuylkill.
Richard G. Edwards,	Coaldale,	Schuylkill.
H. F. Hartman,	Ringtown,	Schuylkill.
Dr. E. R. Decker,	Selinsgrove,	Snyder.
H. H. Cassler,	Hollsopple,	Somerset.
Grace Engle,	Berlin,	Somerset.
H. Reid Weimer,	Cassleman,	Somerset.
Dr. W. S. Mountain,	Confluence,	Somerset.
Dr. R. T. Pollard,	Garrett,	Somerset.
Irvin P. Dull,	Hooversville,	Somerset.
J. H. Judy,	Jennerstown,	Somerset.
W. H. Hay,	Meyersdale,	Somerset.
F. E. Straub,	New Baltimore,	Somerset.
D. J. Wolfersberger,	Rockwood,	Somerset.
Harvey Hay,	Elklick,	Somerset.
C. H. Springer,	Somerfield,	Somerset.
William B. Shafer,	Somerset,	Somerset.
Edward Smith,	Stoyestown,	Somerset.
LeRoy Forquer,	Ursina,	Somerset.
Mrs. Sevilla Geiger,	Sand Patch,	Somerset.
J. J. Kennell,	Wellersburg,	Somerset.
C. F. Livengood,	Boswell,	Somerset.
M. R. Hoffman,*	Scalp Level,	Somerset.
Peter Hoffman,	Windber,	Somerset.
Mrs. Mary Colborn,	Windber,	Somerset.
Dr. Philip G. Biddle,	Dushore,	Sullivan.
M. R. Black,	Forksville, R. D. No. 1,	Sullivan.
R. D. Kehrer,	Eagles Mere,	Sullivan.
James C. Caven,	LaPorte,	Sullivan.

Local Registrars—Continued.

Local Registrar.	Post Office Address.	County.
A. A. Richardson,	Dundaff,	Susquehanna.
L. H. May,	Forest City,	Susquehanna.
William T. Moran,	Friendsville,	Susquehanna.
M. A. Kilrow,	Great Bend,	Susquehanna.
Dr. A. S. Blair,	Hallstead,	Susquehanna.
N. M. Finn,	Hopbottom,	Susquehanna.
George A. Taylor,	Lanesboro,	Susquehanna.
E. B. Beardslee,	Little Meadows,	Susquehanna.
Harry E. Taylor,	Montrose,	Susquehanna.
H. J. Tiffany,	New Milford,	Susquehanna.
Miss Emma Johnston,	Susquehanna,	Susquehanna.
D. J. Lynch,	Susquehanna,	Susquehanna.
Hosmer T. Wright,	Thompson,	Susquehanna.
W. I. Morgan,*	Uniondale,	Susquehanna.
Ira B. Thomas,	Uniondale,	Susquehanna.
Dr. Homer B. Lathrop,	Springville,	Susquehanna.
J. D. Burr,	Blossburg,	Tioga.
M. L. Browne,	Covington,	Tioga.
J. W. Bergin,*	Elkland,	Tioga.
Paul Bergin,	Elkland,	Tioga.
Dr. Edwin E. Clark,	Knoxville,	Tioga.
J. H. Putnam,	Lawrenceville,	Tioga.
Isaac F. Wheeland,	Liberty,	Tioga.
Frank W. Clark,	Mansfield,	Tioga.
A. M. Van Zile,	Osceola,	Tioga.
Lafayette E. Stevens,	Rutland,	Tioga.
C. H. Cornelius,	Tioga,	Tioga.
Norman B. Leslie,	Wellsboro,	Tioga.
Orville S. Kimball,	Westfield,	Tioga.
Dr. Harry W. Howland,	Gaines,	Tioga.
R. J. Blackwell,	Lloyd,	Tioga.
J. R. Slayman,	Hartleton,	Union.
Dr. T. C. Thornton,	Lewisburg,	Union.
John A. Beard,	Mifflinburg,	Union.
J. D. Maize,	New Berlin,	Union.
Victoria Brown,	Allenwood,	Union.
Dr. C. E. Imbrie,	Clintonville,	Venango.
B. T. Grove,	Cooperstown,	Venango.
Silas Criswell,	Emlenton,	Venango.
H. C. Zeamer,	Pleasantville,	Venango.
Newell Hays,	Polk,	Venango.
Edyth G. Tyler,	Rouseville,	Venango.
Dr. F. M. McClelland,	Utica,	Venango.
J. T. Fahey,	Oil City,	Venango.
E. Borland,	Franklin,	Venango.
Dr. H. J. Phillips,	Bear Lake,	Warren.
Dr. Frank C. Willard,	North Clarendon,	Warren.
Charles Brown,	Columbus,	Warren.
H. Mosher,	Grand Valley,	Warren.
A. M. McDonald,	Sugar Grove,	Warren.
E. T. Mouris,	Tidioute,	Warren.
Dr. C. W. Schmehl,	Warren,	Warren.
Dr. J. J. Knapp,	Youngsville,	Warren.
C. E. Martin,	Sheffield,	Warren.
J. E. Tuttle,	Kinzua,	Warren.
Carl L. Rosen,	Garland,	Warren.
Jess P. Miller,	Beallsville,	Washington.
W. F. Richardson,	Bentleyville,	Washington.
Mrs. J. C. White,	South Burgettstown,	Washington.
Walter J. Weaver,	California,	Washington.
Dr. A. L. Runion,	Canonsburg,	Washington.
Charles E. Brashear,	West Brownsville, R. D. No. 1,	Washington.
Dr. Edwin McKay,	Charleroi,	Washington.
Dr. C. C. Cracraft,	Claysville,	Washington.
D. J. Frantz,	Coal Center,	Washington.
W. G. Nease,	Washington,	Washington.
D. P. McKenna,	Elco,	Washington.
J. R. Curry,	Finleyville,	Washington.
E. I. Worrell,	Speers, R. D. No. 1,	Washington.
W. J. Speer,	McDonald,	Washington.
S. W. Sharpneck,	Lock No. 4,	Washington.
Joseph T. S. Cowen,	Roscoe,	Washington.
John H. Kittle,	Speers,	Washington.
Joshua Langham,	Stockdale,	Washington.

Local Registrars—Continued.

Local Registrar.	Post Office Address.	County.
Charles E. Eckels,	West Brownsville,	Washington.
William Smith,*	West Brownsville,	Washington.
E. B. Wells,*	West Brownsville,	Washington.
John D. France,	West Middletown,	Washington.
Dr. Charles B. Wood,	Monongahela,	Washington.
Dr. E. E. French,	Bentleyville,	Washington.
Henry Eaton,	Midway,	Washington.
Dr. J. A. Sprowls,	Donora,	Washington.
Dr. Louis B. Nielson,	Honesdale,	Wayne.
W. C. Knapp,	Hawley,	Wayne.
J. K. Stearns,	Starrucca,	Wayne.
C. H. Stephenson,	Waymart,	Wayne.
Dr. O. J. Mullen,	Hamlin,	Wayne.
John Barrett,	Equinunk,	Wayne.
A. V. Tyler,	Damascus,	Wayne.
J. J. Kline,	Adamsburg,	Westmoreland.
Mrs. W. J. Hawk,	Arnold,	Westmoreland.
S. G. Veitch,	Arona,	Westmoreland.
J. S. Strawn,	Avonmore,	Westmoreland.
W. M. Wynn,	Bolivar,	Westmoreland.
J. S. Brubaker,	Cokeville,	Westmoreland.
Dr. B. Haughwout,	Derry Station,	Westmoreland.
George W. Stough,	Stahlstown,	Westmoreland.
Samuel A. Clements,	Greensburg,	Westmoreland.
C. W. Kirkland,*	Hyde Park,	Westmoreland.
Arthur Gardner,	Hyde Park,	Westmoreland.
C. C. Rodgers,	Irwin,	Westmoreland.
Theodore B. Shank,*	Jeannette,	Westmoreland.
B. F. Painter,	Jeannette,	Westmoreland.
W. T. Osborne,	Latrobe,	Westmoreland.
Dr. D. E. Beltz,	Ligonier,	Westmoreland.
Miss Emma J. Russell,	Livermore,	Westmoreland.
W. H. Bowers,	Madison,	Westmoreland.
John F. McWilliams,	Manor,	Westmoreland.
A. L. Arner,*	Monessen,	Westmoreland.
J. B. White,	Monessen,	Westmoreland.
S. C. Stevenson,	Mt. Pleasant,	Westmoreland.
Miss Margaret L. Rugh,	New Alexandria,	Westmoreland.
S. S. Ulerich,	New Florence,	Westmoreland.
Dr. A. J. Bearer,	New Kensington,	Westmoreland.
Harry Stotler,	Delmont,	Westmoreland.
J. G. Alter,	Parnassus,	Westmoreland.
James B. Smith,	Penn's Station,	Westmoreland.
Dr. N. E. Silsley,	Scottdale,	Westmoreland.
J. W. B. Stewart,	Greensburg,	Westmoreland.
C. A. Kley,	Greensburg,	Westmoreland.
W. W. Poorman,	Vandergrift,	Westmoreland.
M. L. Griffin,	Vandergrift Heights,	Westmoreland.
A. T. Darr,	West Newton,	Westmoreland.
D. B. Hoffman,	Youngstown,	Westmoreland.
Henry R. Detrick,	Stewart's Station,	Westmoreland.
Dr. J. H. Richie,	Sutersville,	Westmoreland.
N. E. Rhoades,	Smithton,	Westmoreland.
Dr. A. H. Caven,	Youngwood,	Westmoreland.
W. S. Clarke,	Seward,	Westmoreland.
Joseph Schell,	Export,	Westmoreland.
Earl Sisson,*	Factoryville,	Wyoming.
F. D. Rowley,*	Factoryville,	Wyoming.
W. H. Tourjee,	Factoryville,	Wyoming.
George A. Carter,	Meshoppen,	Wyoming.
M. R. Conrad,	Nicholson,	Wyoming.
H. M. Lewis,	Tunkhannock,	Wyoming.
C. J. Phoenix,	Noxen,	Wyoming.
J. C. Turner,	Falls,	Wyoming.
C. B. Pickett,	Laceyville,	Wyoming.
Joseph Shaull,	Felton, R. D.,	York.
I. H. Rojahn,	Dallastown,	York.
Samuel H. Klugh,	Delta,	York.
J. Howard Stubbs,	Dillsburg,	York.
Dr. N. C. Wallace,	Dover,	York.
Dr. N. Allen Overmiller,	East Prospect,	York.
J. Walter Brooks,	Fawn Grove,	York.
Samuel S. Grove,	Felton,	York.
C. A. Hoffman,	Franklintown,	York.
John B. Zigner,	Etters,	York.

Local Registrars—Continued.

Local Registrar.	Post Office Address.	County.
F. Y. Stambaugh,	Hanover,	York.
J. C. Brodbeck,	Codorus,	York.
Dr. Harry Spangler,	Lewisberry,	York.
Dr. C. G. Hildebrand,	Loganville,	York.
W. H. Everhart,	Manchester,	York.
John E. Lowe,	New Freedom,	York.
H. William Schwartz,	York New Salem,	York.
W. D. Landis,	York, Sta. 3,	York.
T. H. Hoffacker,	Railroad,	York.
D. Frank Kaltreider,	Red Lion,	York.
Dr. G. M. Fickes,	Seven Valleys,	York.
William F. Meyers,	Shrewsbury,	York.
Dr. George W. Bahn,	Spring Forge,	York.
W. G. Fulton,	Stewartstown,	York.
S. A. Fitzgerald,	Wellsville,	York.
Jacob F. Bortner,	Red Lion, R. D.	York.
William H. Flora,	Wrightsville,	York.
Charles Stump,	Yoe,	York.
John W. Gable,	Hellam,	York.
A. F. Grim,	Windsor,	York.
Dr. J. H. Bennett,	York,	York.
Dr. J. C. Murphy,*	York Haven,	York.
J. W. Fetrow,	York Haven,	York.
Dr. R. A. Hildebrand,	Glen Rock,	York.
Charles M. Stauffer,	York,	York.
Frank Eyster,	LaBott,	York.
Charles G. Elicker,	Rossville,	York.
J. Allen Melhorn,	Mount Wolf,	York.
Dr. R. S. Stahle,	York, R. D. No. 8,	York.
K. E. Beard,	Brogueville,	York.
Charales Koplin,	Airville,	York.

*Retired.

DIVISION OF LABORATORIES AND EXPERIMENTAL STATION.

Director of Laboratories:—James B. Rucker, Jr., M. D.,
Lansdowne, Delaware County.

Bacteriologist:—Alexander Garcia, Philadelphia.
Technical Assistant:—Hervey L. Bates, M. D., Germantown, Philadelphia.
Pathologist:—Frederick C. Narr, M. D., Philadelphia.
Serologist:—Henry M. Wise, M. D., Philadelphia.
Stenographers:—Miss Daisy B. Gery, Philadelphia.
Miss Estelle L. Hecht, Philadelphia.
Preparatuesse:—Miss Margaret H. Coombe, Philadelphia.
Clerks:— Mrs. Mary Graham Andress, Philadelphia.
*Miss Ethel Miller, Philadelphia.
Miss Lillian Kendall, Germantown, Philadelphia.
Mrs. Helen Gunderson, Bartlett, Philadelphia.
†Miss Martha Wallace, Philadelphia.
Helpers:—Leon J. Harris, Philadelphia.
Calvin Harris, Philadelphia.
Andrew Keenan, Philadelphia.
Lewis Brown, Philadelphia.
Miss Rosalie Harris, Philadelphia.

*Resigned. †New appointment.

DIVISION FOR THE CONTROL OF TUBERCULOSIS.

SUBDIVISION OF TUBERCULOSIS DISPENSARIES.

EXECUTIVE STAFF.

Medical Inspector of Dispensaries:—Karl Schaffle, M. D. (Acting), Philadelphia.

Deputy Medical Inspector of Dispensaries:—Frank F. D. Reekord, M. D., Harrisburg, Dauphin County.

Lecturer and Manager, State Health Exhibit:—William C. Miller, M. D., Bedford, Bedford County.

Statistical Inspector:—Percival Herman, M. D., Kratzerville, Snyder County.

Chief Visiting Dispensary Nurse:—Miss Alice M. O'Halloran, Philadelphia.

Assistant Chief Visiting Dispensary Nurse:—Miss Margaret C. Parsons, Philadelphia.

Stenographers:— Miss Olive E. Jamison, Ingram, Allegheny County.
Miss Florence L. Flyte, Williamsport, Lycoming County.
rMiss Margaret McGannon, Punxsutawney, Jefferson County.
*Miss Alma G. Ernest, Mifflintown, Juniata County.

Clerks:— Mrs. Linnie K. Hiester, Harrisburg, Dauphin County.
Miss Anna M. Hartley, Bloomsburg, Columbia County.
§Miss Helen Campfield, Meadville, Crawford County.

Assistant with State Health Exhibit:—William M. Colvin, Bedford, Bedford County.
Miss Ida J. Lockett (Nurse), Frackville, Schuylkill County.

rRetired. *Promoted. §Transferred from Medical Division.

TUBERCULOSIS DISPENSARIES.

County.	Place.	Physicians.	Nurses and Clerks.
Adams, ----------	Gettysburg, -----	Dr. J. R. Dickson, C-----	‡Miss Florence Matthews.
Allegheny, -------	Braddock, -------	Dr. F. K. Whitfield, C----	Miss Lola A. Flenner.
	Homestead, -----	Dr. A. P. Fogelman, C---	Miss Jessie G. Barclay.
	McKeesport, ----	Dr. D. P. Blose, C------- Dr. W. H. Leffler, -------	Miss Belle Beattie.

TUBERCULOSIS DISPENSARIES—Continued.

County.	Place.	Physicians.	Nurses and Clerks.
	Pittsburgh,	Dr. S. M. Rinehart, C. Dr. J. F. Edwards, Dr. F. Stolzenbach, Dr. I. H. Alexander, Dr. S. Hamilton, Dr. J. H. McCready, Dr. John Mackrell, Dr. H. O. Mateer, Dr. J. W. E. Ellenberger,	Miss N. C. Negley. Miss Flora Graham. Miss Laura Moyes. Miss Laurena Boyd. Miss Elizabeth Holmes. Miss Ophelia Rush. Miss Sara K. Thimble. r Mrs. Carrie P. Butler. Miss B. Mae Patterson. s r Miss Margaret Craig. s Miss Alice K. Negley (clerk). Miss Marjorie Stewart (clerk).
	Tarentum,	Dr. W. A. Arnold, C. Dr. F. W. Silsby,	Miss Nora P. Hurst.
	Wilkinsburg,	Dr. J. M. McNall, C.	Miss Gertrude Hall. Miss Blanche MaWhinney. r Miss Tirzah Martin. s Miss Nancy Martin. s
Armstrong,	Kittanning,	Dr. T. N. McKee, C. Dr. L. D. Allison,	Miss Viola C. Lawson.
Beaver,	Beaver Falls,	Dr. Bruce Snodgrass, C.	‡Miss Alice M. Nicely. s ‡Miss Estella B. Knight. s
	Rochester,	Dr. Boyd B. Snodgrass, C	‡Miss Alice M. Nicely. r ‡Miss Estella B. Knight. s
Bedford,	Everett,	Dr. W. de la M. Hill, C.	‡Miss Mary Sullivan.
Berks,	Hamburg,	Dr. Thos. H. A. Stites, C	Miss Ella R. Reed.
	Reading,	Dr. Israel Cleaver, C. Dr. Chas. P. Henry, Dr. Walter M. Bertolet, Dr. Joseph Stoeckler,	Miss Anna M. Lafferty.
Blair,	Altoona,	Dr. J. D. Findley, C. Dr. E. B. Miller, Dr. A. S. Koch,	Mss I. Mae Wharton.
	Tyrone,	Dr. W. S. Musser, C.	‡Miss Mayme Peck.
Bradford,	Towanda,	Dr. T. Ben Johnson, Jr., C.	‡Miss Lois Lilley. Miss Nellie Schumann (clerk).
Bucks,	Bristol,	Dr. J. de B. Abbott, C.	Miss L. Gillick.
	Doylestown,	Dr. I. S. Plymire, C.	‡Miss Elizabeth Hilkert.

TUBERCULOSIS DISPENSARIES—Continued.

County.	Place.	Physicians.	Nurses and Clerks.
Butler,	Butler,	Dr. H. D. Hockenberry, C. Dr. H. P. St. Clair,	Miss Kate Brady.
Cambria,	Cresson,	Dr. W. G. Turnbull, C.	Miss Eliza C. Allison.
	Hastings,	Dr. D. S. Rice, C.	Miss Nell Murphy.
	Johnstown,	Dr. W. E. Matthews, C. Dr. H. F. Tomb, Dr. C. M. Harris, Dr. R. C. Davis,	Miss Katharine Hughes. Miss Anna Sullivan, Miss Bess M. Hepburn. Miss Minnie Matthews (clerk).
Cameron,	Emporium,	Dr. H. S. Falk, C.	‡Miss Edith Bottorf.
Carbon,	Lansford,	Dr. G. P. Hill, C.	‡Miss Ada Riebe.
	Mauch Chunk,	Dr. E. G. Bray, C.	‡Miss Ada Riebe.
Centre,	Bellefonte,	Dr. S. M. Huff, C.	‡Miss Mayme Peck.
	Phillipsburg,	Dr. C. E. McGirk, C.	Miss Margaret Stevenson.
Chester,	Coatesville,	Dr. E. A. Graves, C.	Miss Ruth Paxson.
	Phoenixville,	Dr. S. A. Rulon, C.	‡Miss Gertrude Raup.
	West Chester,	Dr. Jos. Scattergood, C.	‡Miss Gertrude Raup.
Clarion,	Clarion,	Dr. F. P. Phillips, C.	Miss Salome M. Snyder (clerk).
Clearfield,	Clearfield,	Dr. S. C. Stewart, C.	Miss Elizabeth Williams.
Clinton,	DuBois,	Dr. R. R. Jordan, C.	‡Miss Sara Dunsmore.
	Lock Haven,	Dr. R. B. Watson, C.	‡Miss Mayme Peck.
Columbia,	Renovo,	Dr. C. L. Fullmer, C.	‡Miss Edith Bottorff.
Crawford,	Berwick,	Dr. S. B. Arment, C.	Miss Rhetta Follmer.

TUBERCULOSIS DISPENSARIES—Continued.

County.	Place.	Physicians.	Nurses and Clerks.
	Meadville,	Dr. J. K. Roberts, C. Dr. W. E. Hyskell,	‡Miss Anna Prather. r ‡Miss Rose W. Murphy. s
	Titusville,	Dr. C. E. Spicer, C.	‡Miss Anna Grafe. ‡Miss Helena O'Hara. s ‡Miss Sara A. Crooks. §
Cumberland,	Carlisle,	‡Dr. H. B. Bashore, C. Dr. E. R. Plank,	‡Miss Lucy Shellenberger.
	West Fairview,	‡Dr. H. B. Bashore, C.	‡Miss Lucy Shellenberger.
Dauphin,	Harrisburg,	Dr. C. R. Phillips, C. Dr. J. W. MacMullen, Dr. C. J. B. Flowers, Dr. H. H. Farnsler, Dr. W. T. Douglass, Dr. C. E. L. Keene,	Miss Sara Butler. Miss Helen J. Roth. Miss Blanche Yowler. r Miss Jessie McClure. Miss Bertha Brown. Miss Frankford Lewis. Miss Bess Johns. r Miss Maud E. Griffith. s Miss Irene Harding. § Miss Elda Graybill. § Miss Katherine Miller (clerk). Miss Annie Miller (clerk).
	Lykens,	Dr. M. D. Lehr, C.	Dr. J. A. Keiter (clerk).
Delaware,	Chester,	Dr. J. W. Wood, C. Dr. M. A. Neufeld, Dr. J. S. Eynon, Dr. W. E. Egbert, s.	Miss Julia C. Dalton. Miss Katharine Donnelly. Mrs. Katharine Worthington. Miss Helen Hanley (clerk).
Elk,	Ridgway,	Dr. J. G. Flynn, C.	‡Miss Sara Dunsmore.
Erie,	Corry,	Dr. C. B. Kibler, C.	‡Miss E. M. Hartleb. ‡Miss Susan McFeely.
	Erie,	Dr. J. W. Wright, C. Dr. A. H. Roth,	‡Miss E. M. Hartleb. ‡Miss Susan McFeely.
Fayette,	Brownsville,	Dr. F. S. Hoover, C.	‡Miss Mary Allen. ‡Miss Lessie W. Underwood. s r ‡Miss M. E. Flynn. s
	Connellsville,	Dr. T. B. Echard, C.	‡Miss Mary Allen. ‡Miss Lessie W. Underwood. s r ‡Miss M. E. Flynn. s
	Uniontown,	Dr. O. R. Altman, C.	‡Miss Mary Allen. ‡Miss Lessie W. Underwood. s r ‡Miss M. E. Flynn. s r

TUBERCULOSIS DISPENSARIES—Continued.

County.	Place.	Physicians.	Nurses and Clerks.
Forest,	Tionesta,	Dr. F. J. Bovard, C.	‡Miss Sara A. Crooks. § ‡Miss Anna Grafe. ‡Miss Helena O'Hara. §
Franklin,	Chambersburg,	Dr. Paul P. Allen, ACt. Dr. John H. Kinter, C.	‡Miss Florence Matthews.
	Waynesboro,	Dr. W. C. Shultz, C.	‡Miss Florence Matthews.
Fulton,	McConnellsburg,	Dr. J. W. Mosser, C.	H. O.
Greene,	Waynesburg,	Dr. J. T. Iams, Ct. Dr. S. H. Iams, AC.	‡Miss Jennie M. Riles.
Huntingdon,	Huntingdon,	Dr. H. C. Frontz, C.	Miss Julia Black.
Indiana,	Indiana,	Dr. W. A. Simpson, C.	‡Miss Carrie A. Hensel.
Jefferson,	Brookville,	Dr. J. A. Haven, C.	‡Miss Carrie A. Hensel.
	Punxsutawney,	Dr. S. M. Beyer, C.	‡Miss Carrie A. Hensel.
Juniata,	Mifflintown,	Dr. W. H. Banks, C. Dr. I. G. Headings,	Miss Elsa Auker.
Lackawanna,	Carbondale,	Dr. W. J. Lowry, C.	‡Miss Viola Kennedy.
	Scranton,	Dr. J. C. Reifsnyder, C. Dr. C. Fakowsky, Dr. Joseph Wagner, Dr. Carl Brown,	Miss Reba Tucker. Miss Carolyn E. Ellwanger.
Lancaster,	Columbia,	Dr. Richard Reeser, C.	‡Miss Elsie B. Hatfield,
	Lancaster,	Dr. J. L. Mowery, C. Dr. H. F. Myers,	Miss Clara Henrich. ‡Miss Elsie B. Hatfield. Miss Janet Landis (clerk).
Lawrence,	New Castle,	Dr. J. D. Moore, C. Dr. J. D. Tucker,	Miss Della A. Glenn.
Lebanon,	Lebanon,	Dr. A. J. Riegel, C. Dr. H. E. Maulfair,	Miss Margaret Fothergill. Miss Mary E. Brua. Mr. Robert A. Brandt (clerk).

TUBERCULOSIS DISPENSARIES—Continued.

County.	Place.	Physicians.	Nurses and Clerks.
Lehigh,	Allentown,	Dr. W. D. Kline, C. Dr. J. T. Butz,	Miss Louise Tritschler. ‡Miss Elizabeth R. Miller.
Luzerne,	Hazleton,	Dr. W. L. Hutchison, AC Dr. J. W. Leckie,	Miss Marion Good.
	Nanticoke,	Dr. C. E. Bennett, C.	Miss Bertha M. Morgan. Miss Jennie May. s
	Pittston,	Dr. S. L. Underwood, C. Dr. H. L. Ransom,	Miss Minnie Frey. Miss Catharine Merrick. s
	Wilkes-Barre,	Dr. C. H. Miner, C. Dr. G. W. Geist, Dr. S. Reichard, r. Dr. S. D. Wyckoff, Dr. R. L. Wadhams, Dr. G. W. Carr, Dr. Walter Davis, Dr. J. Williams, Dr. G. H. McConnon, Dr. M. C. Rumbaugh, Dr. Ruth M. Lance,	Miss Emily G. Jones. Mrs. Ethna Silvera. Miss Emma Blackwell. Miss Emily H. Lewis. Miss Lida Tucker. Miss Ella B. Featherstone, r Miss Nellie C. Loftus. Miss Mary Burns. Miss Ruth B. Rae. Miss Helen Masterson (clerk).
Lycoming,	Williamsport,	Dr. C. W. Youngman, C. Dr. R. F. Trainer, Dr. Wesley F. Kunkel, r. Dr. Waldo Hull,	‡Miss Anna Gorman. ‡Miss Jennie Simmons.
McKean,	Bradford,	Dr. Wade Paton, C.	H. O.
	Kane,	Dr. L. W. Dana, C.	‡Mss Sara A. Crooks.
Mercer,	Sharon,	Dr. P. P. Fisher, C.	‡Miss Anna Prather, r ‡Miss Rose W. Murphy, s
Mifflin,	Lewistown,	Dr. C. H. Brisbin, C.	Miss E. L. Felker.
Monroe,	Stroudsburg,	Dr. W. L. Angle, C.	‡Mrs. Jane P. Miller. §
Montgomery,	Ardmore,	Dr. A. H. Davisson, C.	‡Mrs. Florence Peter.
	Jenkintown,	Dr. W. B. Jameson, C.	‡Miss Elizabeth Hilkert.
	Norristown,	Dr. H. H. Whitcomb, C. Dr. C. H. Mann,	‡Miss Lillian Brown.
	Pottstown,	Dr. T. E. Wills, C.	‡Miss Lillian Brown.

TUBERCULOSIS DISPENSARIES—Continued.

County.	Place.	Physicians.	Nurses and Clerks.
Montour,	Danville,	Dr. Cameron Shultz, C.	‡Miss Elda Graybill. § ‡Miss Estelle Zimmerman. s
Northampton,	Bangor,	Dr. A. A. Seem, C.	‡Mrs. Jane P. Miller.
	Easton,	Dr. E. M. Green, C. Dr. T. C. Zulick, aC. Dr. W. P. Thomason, r. Dr. W. H. Mellhaney, Dr. J. E. Fretz,	‡Miss Elizabeth R. Miller. Miss Marion Thomas (clerk).
	S. Bethlehem,	Dr. W. D. Chase, C.	Miss Katherine E. Lynch. ‡Mrs. Jane P. Miller.
Northumberland,	Milton,	Dr. R. B. Tule, C.	‡Miss Sara Smith.
	Mt. Carmel,	Dr. W. T. Williams, C. Dr. T. L. Williams,	Miss Emma H. Clemence. r Miss Clara P. Larzelere. Miss Marie E. Wittig.
	Shamokin,	Dr. R. R. Simmons, C. Dr. C. M. Malone,	Miss Eva Rebuck.
	Sunbury,	Dr. J. B. Cressinger, C.	Miss Anna Hileman.
Perry,	New Bloomfield,	Dr. A. R. Johnston, C.	H. O.
Philadelphia,	Philadelphia, 1731 Orthodox St., (F'k'd.)	Dr. E. J. Murphy, C. Dr. F. A. Murphy, Dr. Benjamin Robinson,	Miss Effie M. Heeney. Miss Florence Phillips. Miss Mary A. Doyle.
	Philadelphia, 1630 Poplar St.	Dr. A. P. Francine, C. Dr. J. P. Frantz, Dr. R. G. Torrey, Dr. B. L. Singer, Dr. A. Seth Brumm, Dr. LeRoy A. Wilkes, Dr. Isaac H. Jones, Dr. C. H. Grimes, Dr. Thomas Klein,	Miss Margaret G. Flynn. Miss Ida M. Swartz. Miss Blanche Hayes. Miss Helen Armstrong. Miss Mae Richards. Miss Irene Harding. § Miss Mary H. Hendrie (clerk). Miss H. Clair Bruno (clerk).
	Philadelphia, 1400 S. 24th St.	Dr. S. J. Repplier, C. Dr. C. M. Montgomery, Dr. Henry Parrish, Dr. A. T. McNerney,	Miss Ida E. Tinsley. r Mrs. Evelyn Fry. Miss Mary E. Walsh. ‡Mrs. Florence Peter. Miss Eleanor Caffrey. Miss Clara Knox. s r Miss Ruth Bowen. s Miss Agnes Souder (clerk).
Pike,	Milford,	Dr. W. B. Kenworthey, C	H. O.

TUBERCULOSIS DISPENSARIES—Continued.

County.	Place.	Physicians.	Nurses and Clerks.
Potter,	Coudersport,	Dr. E. H. Ashcraft, C.	H. O.
Schuylkill,	Pottsville,	Dr. L. T. Kennedy, C r. Dr. J. B. Rogers, C. Dr. G. H. Boyer, r. Dr. James B. Heller,	Miss Clara Kantner. Miss Alberta Schwarze. Mr. S. M. Evans (clerk).
	Shenandoah,	Dr. H. M. Wasley, C. Dr. C. Gruhler, Dr. M. J. Patrick, S.	Miss Veronica D. Kazakevicz. r Miss Lucy Sheehy. Miss Estelle Feist. s Miss Margaret Okewicz.
	Tamaqua,	Dr. Fred B. Harding, AC	‡Miss Ada Riebe.
Snyder,	Selinsgrove,	Dr. H. F. Wagenseller, C	‡Miss Elda Graybill.§ ‡Miss Estelle Zimmerman. s
Somerset,	Meyersdale,	Dr. C. P. Large, C.	‡Miss Mary Sullivan.
Sullivan,	Dushore,	Dr. P. G. Biddle, C.	‡Miss Lois Lilley.
Susquehanna,	Montrose,	Dr. J. G. Wilson, C.	‡Mrs. Clementine VanAuken.
	Susquehanna,	Dr. D. J. Peck, AC.	‡Mrs. Clementine VanAuken.
Tioga,	Wellsboro,	Dr. C. W. Webb, AC.	‡Miss Jennie Simmons.
Union,	Mifflinburg,	Dr. C. H. Dimm, C.	‡Miss Sara Smith.
Venango,	Franklin,	Dr. H. F. McDowell, C.	Mrs. Catherine B. Sawyer.
	Oil City,	Dr. J. P. Strayer, C.	‡Miss Anna Grafe. ‡Miss Helena O'Hara. s
Warren,	Warren,	Dr. C. W. Schmehl, C.	‡Miss Sara A. Crooks.
Washington,	Monongahela,	Dr. C. B. Wood, C.	‡Miss Alice Nicely. r ‡Miss Marie Watson.
	Washington,	Dr. E. M. Hazlett, C.	Miss Angeline White. ‡Miss Jennie N. Riles.
Wayne,	Honesdale,	Dr. L. B. Nielsen, C.	‡Miss Viola Kennedy.

TUBERCULOSIS DISPENSARIES—Continued.

County.	Place.	Physicians.	Nurses and Clerks.
Westmoreland, ---	Greensburg, -----	Dr. I. M. Portser, C----	‡Miss Caroline Kline.
	Mt. Pleasant, --	Dr. M. W. Horner, C----	‡Miss Caroline Kline.
	Monessen, -------	Dr. M. J. Cramer, C----	‡Miss Marie Watson.
Wyoming, --------	Tunkhannock, --	Dr. H. L. McKown, C---	Miss Jessie L. Ross.
York, ----------	Hanover, -------	Dr. J. H. Bittinger, C----	Miss Agnes M. Martin.
		Dr. H. M. Alleman, ----	Mr. F. Y. Stambaugh (clerk).
	York, ----------	Dr. J. S. Miller, C-------	Mrs. Elizabeth Fink.
		Dr. Roland Jessop, ------	Miss Helen Miller.
		Dr. H. D. Smyser, ------	Miss Mina Keller (clerk).
		Dr. L. M. Hartman, ----	
		Dr. B. F. Parker, -------	
		Dr. L. S. Weaver, -------	
		Dr. B. W. Shirey, -------	
		Dr. W. C. Smith, -------	

C Physician in Charge.
AC Acting Physician in Charge.
aC Associate Physician in Charge.
†Deceased.
r Retired.
§Transferred.
‡Attached to more than one dispensary.
x Promoted.
S Substitute Assistant Physician with pay.
s Substitute nurse.
HO Township Health Officer.

SUBDIVISION OF TUBERCULOSIS SANATORIA.

PENNSYLVANIA STATE SANATORIUM FOR TUBERCULOSIS NO. 1, MONT ALTO.

Medical Director:—Fred C. Johnson, M. D.
Bradford, McKean County.

Deputy Medical Director:—John Berry, M. D., Philadelphia.
*First Assistant Physician:—William T. Davies, M. D., Bradford, McKean County.
First Assistant Physician:—Henry A. Gorman, M. D., Philadelphia.

Assistant Physicians.

*Aaronoff, Joseph, M. D., Philadelphia.
Carskadden, Henry A., M. D., Williamsport, Lycoming County.
Cherry, C. H., M. D., Charlotte, N. C.
*Cosgrove, J. J., M. D., Hopkinton, Mass.
*Farquhar, George W., M. D., Pottsville, Schuylkill County.
Gay, William M., Windsor, Vermont.
*McKelvey, William R., Binghamton, N. Y.
Packard, Louis A., Newtown, Iowa.
*Rinehardt, S. M., Pittsburgh, Allegheny County.

*Schlaff, Herman, M. D., Philadelphia.
Shafritz, Nathaniel G., Philadelphia.
*Silk, Samuel A., M. D., Philadelphia.
Sloane, Maurice T., Philadelphia.
*Stevens, Thomas A., M. D., Baltimore, Md.
Stewart, H. M., Pittsfield, Mass.
*Stockler, Joseph A., M. D., Philadelphia.
*Thomas, Wesley C., Macon, Ga.
*Tunitsky, Leon J., M. D., Philadelphia.
Woods, William W., Boalsburg, Centre County.
Haralson, Chas. H., Atlanta, Ga.
*Heist, George D., M. D., Philadelphia.

Consulting Surgeon:—George B. Kunkel, M. D., Harrisburg, Dauphin County.
Consulting Laryngologist:—Charles Rebuck, M. D., Harrisburg, Dauphin County.
Druggist:—Robert E. Hemminger, Carlisle, Cumberland County.
Bacteriologists:—*Gillman C. Dolley, M. D., Philadelphia.
*Elmer E. McKee, Philadelphia.
Superintendent of Grounds and Buildings:—John H. Patterson, Chambersburg, Franklin County.
Steward:—Louis Sorg, Chambersburg, Franklin County.
General Foreman:—J. T. Staley, Fayetteville, R. D., Franklin County.
Mechanic:—Arthur Yeager, Chambersburg, Franklin County.
Storekeeper:—Harry Kunkel, Glen Rock, York County.
Clerk:—Walter L. Garrett, West Chester, Chester County.
Sanatoria Statistician:—Miss Anna L. Hart, South Bethlehem, Northampton County.
Stenographers:—Miss Mabel C. Johnson, Harrisburg, Dauphin County.
*Miss Jane B. Kenyon, Carlisle, Cumberland County.
Head Nurse:—Miss M. Agnes Lowell, Lancaster, Lancaster County.
Head Nurse, Hospital:—Miss Mary A. Weir, Wilkes-Barre, Luzerne County.
Head Nurse, Children's Hospital:—Miss Margaret Bell, Cumberland, Md.
*Head Nurse, Children's Hospital:—Miss Catherine I. Cobb, Scranton, Lackawanna County.
Matrons:—Mrs. Annie M. Klee, Chambersburg, Franklin County.
Mrs. Annie E. Yeager, Chambersburg, Franklin County.

Nurses.

*Bailey, Grace
Bancroft, Clara
*Boyle, Hilda
Blackwood, Mary A.
Brede, Kathryn
Brooks, Eleanor C.
Brown, Ella
*Buhl, Augusta
Burkert, Sara V.
Cadden, Catherine
*Carter, Dorothy
Christopher, Ida M.
Cockerille, Anne D.
Cole, Mae
Cooper, Olia M.
Cope, Annette
Corcoran, Mary M.
Cummings, Anna
*Daly, Mrs. Sadie
Davis, Anne
Dowling, Anna
*Evans, Hilda R.
*Fitzgerald, Catherine B.
*Flynn, Teresa
Fussell, Edna L.
Gallagher, Anne L.
Gibb, Helen C.
Greer, Ruth M.
Hall, Caroline
*Hamilton, Emma
Hayes, Florence B.
*Henrich, Emily D.

*Resigned.

*Herzberg, Helen
*Heslin, Margaret
Holden, Mary
*Holt, Laura
Hughes, Braide
Hughes, Ellen J.
*Kann, Catherine
*Keating, Anna G.
Keefer, Edna
Kennedy, Marie
*Kenney, Helen B.
Kierns, Anna
*Kinnear, Christiana L.
*Lamb, Bernuda L.
Landers, Lillian
*Larson, Vinetta D.
*Laskowske, Florence
Lorrah, Elizabeth
Lyall, Georgiana
Lynch, Nellie
McDonald, Theresa
*McKeon, Ella
McKinnie, Bess
Magdeburg, Florence A.
Marcus, Agnes
Miller, Lyla M.
Morgan, Anna
Morris, Elizabeth
Osbaugh, Blanche
Patterson, Mrs. Louise
Peel, Elizabeth
Peightel, Edith
*Pendergast, Rose
Perrine, Mrs. Helen
*Price, Elizabeth
*Ruggles, Esther
Ruth, Theresa
Ryan, Elizabeth B.
Saltzer, Anna
Schaffer, Dorothy C.
Shough, Frances
*Singles, Ella
*Starrett, Ethel
*Stewart, Esta
Tegge, M. Othelia
*Toman, Margaret U.
Truax, Irene
Verdier, Mary
Walhay, Ada
Ward, Margaret
*William, Lydia
Williams, Phyllis
Wilson, Mary
Xander, Ella
Yeager, Mrs. Marie C.
Yowler, M. Blanche
*Overdorf, Dora E.

Poultrymen.

Fitzgerald, George
*Brennan, Michael J.
*Cantlin, James
DePilla, Nicholas
*Gordon, Alexander
*Rundle, Harry

Swineherds.

*Gutzell, Francis J.
*McCarthy, Daniel
Wilson, John

Messengers.

*Rock, Arthur
Sanatowicz, Joseph
*Smith, Penrose

Orderlies.

Campbell William, Head Orderly, Hosp.
*Burns, Joseph
Cincinnatti, James
Devennuy, Alexander
Dohancy, Michael
Dransfield, Wm.
*Duffy, Wm.
*Foley, Leroy
*Franklin, Norman
*Fench, James
*Gillespie, Edward
*Kelly, Patrick
*Koch, John
Koprowske, John
Kozmierick, Ludwig
*McDonald, Joseph
*McKeon, Edward
Mayhugh, Charles
*Moore, Chas.
*Nees, Carl
O'Donnell, Wm.
*Palchak, Gez
*Perniche, Antonio
Reithers, George
*Ripley, Joseph
*Ruth, Milton

*Resigned.

*Sanatowicz, Joseph
*Schultz, John
*Squillace, James
*Van Lacken, Leon
*Walls, James
*Johnson, Hugh
*Williams, Walter
*Baurelie, Albert
Kozick, Simon
*Kraft, Laurence
*Kandrach, Mike
Matthieson, James
Schramm, Andrew
*Baxter, Chas. J.
*Boyle, Edw. J.
*Ey, Wm.
*McLean, Eugene
*MacNew, Wm.
Weaver, Chas.
*Brett, John
Moore, Edward
*Short, Ward
Sokoloski, John
*Mulligan, Joseph
Sadler, James
*Youskelli, Chas.
Adams, Victor

Sewall, Martha
*Davis, Edith
*Fields, Rose
*Dehaney, Mary
Barbour, Margaret
Brown, Margaret
*Weaver, Tina
Kelley, Catherine
Hardick, Annie
*McGee, Agnes
*Papp, Anna
Davies, Hannah
*Cook, Tillie
*Strasbaugh, Lucy
*Wooley, Clara
*Pone, Anna
Kirwin, Mary
*Baroni, Aline
*Eyster, Elizabeth
*Worrell, Lottie
*Duffy, Edna
*Eberenze, Gertrude
*Fox, Pearl
Rogan, Margaret
Dank, Mary
Johnson, Helena

Portner, Morris
Miller, Leroy
Davin, Wm.
*Friel, Aloysius
*Gallagher, Wm.
Palmero, Frank
Zyskowske, Jacob
*Amons, Joseph F.
*Brownlee, Peter
Lawrence, Joseph
Tatta, Flaviano
*Golden, John
Settles, Wm.
Frommer, Norman
Hardin, Jesse
Toll, Edw.
*Rowland, Anthony
Alkazin, Richard
Steacy, Howard
Dalaski, Joseph
O'Neill, John
Bryan, Richard
Stein, Charles
Tutch, George
Ovise, Milton
Pocadello, Frank
Gordon, Alexander

Wardmaids.

Friel, Edith
*Ewing, Evelyn
*Hirs, Anna
*Bamer, Sarah
*Barnardo, Carmello
Hermelin, Frances
*Kevin, Sarah
*Wolford, Lillie
*Stott, Jessie
*Hatchadourian, Esther
Gordon, Helen
Bandenburg, Apollini
*Venable, Carrie
Owens, Alice
*Pasteric, Mary
Kisselman, Lillie
Ogden, Estella
Diehl, Isabelle
Fitzpatrick, Nellie
*McDonald, Sadie
Quirk, Ethel
Souder, Margaret
Calkins, Elizabeth
*Herrington, Catherine
Rosini, Mary

*Resigned.

Lalah, Katie
McCloskey, Mary
Lightner, Clara
Fasciszeska, Mary
*Gillespie, Agnes
Kerr, Sue
*Logan, Eleanor

Cooks.

*Wolfgang, Mrs. Elsie
*Butterfield, Mrs. Alice
Grady, Anna
*Rodgers, Mrs. Alda
Syrbo, Pit, chef
*Hairkus, Ignotz, chef
Pryczka, Stefan, asst. chef
*Hansen, Fred
*Gramozi, Gus
*Bryant, Martha
Fish, Samuel
Olejnik, John
*Spittle, Mary,
Zink, Anna
Sechrist, Mary J.
Avgis, Peter, chef

Chambermaids.

*Sulsbaugh, Anna
Funk, Sadie
Haverstick, Mary
Stambaugh, Mary
*Kauffman, Bertha
McCusker, Mary

Telephone Operators.

*Maher, Johanna
Maher, Daisy
Tomlinson, Fannie
Bauer, Sadie

Seamstresses.

Boyle, Julia
Garber, Josie
Liggett, Florence

Waitresses.

*Ottenberger, Adeana
*Bolton, Elizabeth
*Bolton, Margaret
*Hobday, Mrs. Esther
*Miller, Daisy
Ewing, Evelyn
Ewing, Mary
*Eyster, Madge
*McDermitt, Rose
Adams, Ella
Barnes, Ida
Baker, Ruth
Baker, Jane
*Burket, Margaret
*Beck, Mary
Bowman, Kathryn
*Benchoff, Pearl
*Bucher, Martha
Baker, Lillian
Fisher, Margaret
*Fetrow, Jessie
*Farridy, Gertrude
*Grubb, Alda
*House, Mary A.
Hall, Mary
*Hall, Bertha
Hill, Mary
Hill, Ethel
*Harris, Harriet
*Humphrey, Lillian
*Hacker, Margaret
*Lowery, Viola
Lowrey, Lulu
*Luckenbaugh, Irene
Martin, Fleda
*Martin, Catherine
McCann, Nellie
*Nye, Irene
*Nye, Minerva
*Palmer, Mae
*Pittenger, Muriel
*Phillips, Ruth G.
*Palmer, Anna M.
*Rosenberry, Besse
*Rogers, Rose
Strouse, Ella
*Sharf, Milldred
Steinberger, Grace

*Resigned.

Steinberger, Virgie
Schory, Josephine
Toland, Louise
Wagaman, Beryl
Wingert, Helen
*Weekley, Hilma
*Weekley, Laura
*Eichholtz, Anna I.
*Hovis, Lela
*Hennel, Hazel
*McDermitt, Sara
*Stoops, Gail
*Rosenberry, Ruth
*Stankus, Tekla
*Elder, Hilda
*Richmond, Alverna
*Myers, Alma
*Motter, Mary
*Snyder, Katherine
*Barrells, Amanda
*Hemler, Edna
*Matchner, Marion
*Mathiewson, Mabel
Norton, Florence
*Singley, Nellie M.
*Kulp, Irene
*Martin, Carrie
Burkey, Marie
*Bryson, Cecelia
*Barrells, Blanche
*Gilbert, Mary
Norchiewicz, Bridget
*Pisalski, Mary
Reisinger, Olive
*Shamp, Harriet
*Swank, Effie
Ushinski, Julia
*Ward, Mary S.
Franklin, Ailie
Hudson, Sadie

Kotarskie, Victoria
Ushinski, Isabella
*Wallace, Elizabeth
Schory, Bertha
*Bosler, Elizabeth
*Bowersox, Mary
Garlin, Kathryn
Howe, Margaret
Irwin, Adele
McCleary, Myrtle
*Spittle, Ruth
*Bohler, Mrs. Blondine
Kuczmarski, Stella
Urbansky, Victoria
Dotterweich, Mary
Garman, Helen
Murry, Ella
Milin, Stefania
*Spittle, Mary
Cox, Georgia
Cox, Carrie
Brown, Alberta
*Savage, Katherine
Butler, Rebecca
*Mathews, Anna
*Metro, Alice
Page, Mary
Shaffer, Emma J.
Steinberger, Mary
Steinberger, Tillie
Stoler, Bessie
*Truett, Mabel
*Spurrier, Stella
Henry, Sara
Wynne, Mary
Evans, Sarah P.
Barricks, Helen
Kauffman, Edith
*Seilhamer, Mabel
Misaras, Mary

Kitchen Helpers.

Toner, Margaret
Hnatuik, Mary
*Pytlowana, Ena
*Downs, Mamie
*Olejnik, John
Hnatuik, Dick
Matchner, Mary
*Unterberger, Anna
*Pitlowana, Mary
*Yuswyn, Tekla
*Mort, Effiie

*Sechrist, Mary
*Dzioba, Mike
*Rivers, Ronie
*Bender, Nora
*Sheva, Clara
Saluta, Victoria
Serban, George
Zyskowsky, Frances
Truckowsky, Annie
Androlewicz, Emily
Bryant, Martha

*Resigned.

Scrubwomen.

*Strawser, Etta
Lewickoi, Emiline
Nestelco, Anna
*Gummo, Lydia
*Wosnisa, Alexandria
*Borsuk, Pawlina (Hnatuik)
*Dzioba, Ena
*George, Zorka
*Gtusnka, Kyjda
Krasnoslika, Mina
Krastoscu, Mary
*Nedelcu, Sofe
Ostap, Ena
Olejnik, Mary
Skoczylas, Mary
Bas, Mary
*Lux, Meri
*Hirs, Anna
*Marszis, Kedi
Milos, Lena
Marszalek, Mary
*Marian, Linka
*Summarin, Anna
*Joba, Eva
*Stankus, Tekla
*Butan, Eva
*Pytlowanna, Ena
*Stoneska, Bersida
*Foleska, Stella
Marmaza, Lena
*Sheva, Clara
*Roborsky, Martha
Kuczmarski, Blanche
*Nieureadomski, Tessie
*Zapitz, Cassie
*Beveczowska, Julia
Yuswyn, Tekla
Maraczsuk, Eva
Kusiesky, Julia

Watchmen.

Whitney, John
*Hoffman, Harry
Duffy, John
*Collins, Thomas
*Long, Thos. K.
McCarthy, Daniel
*Baurelie, Albert C.
Whalen, James
*Wilson, John
*Sauerwein, Wm.
*McGreery, Hugh
*Palchak, Gez
*Youskelli, Chas.
*Safro, James
Sherwood, Samuel
*Henlein, Al
*Koch, John

Bakers.

*Schiller, Eugene
*Vetter, Wm.
*Paul, Otto
*Jeremias, Alexander
Dieterle, Andrew
*Crosby, Maurice
*Snyder, Wm.
*Misk, Souren
Welshleger, Adam

Butcher.

Wm. Sorg.

Vegetable Peelers.

Folk, Laura
*Franklin, Ailie
*Halkivicz, Kyjda
Kosowska, Wikta
*Murry, Ella
Kurinsky, Stella
*Norchiewicz, Bridget
*Sloan, Ellen
*Truckowski, Annie
Shamp, Harriet
Halitsky, Frances
Anaseavage, Josephine

Dishwashers.

John, George
Stec, Harry
*Brett, John
*Nees, Carl
*Burns, Joseph
*Kozick, Simon
*Squillace, James
*Sokoloski, John
*Adams, Victor
*Dransfield, Wm.
Golden, John

*Resigned.

Potwashers.

Skoczylas, John
Smykir, Joseph

Cellarmen.

*Butler, Oscar A.
*Barnes, Harry
Rock, Jesse
Carbaugh, Oscar
Wagaman, Archie
*Nedelco, Nic

Laundrymen.

*Buck, F. C.
Lawhorne, Charles
Baker, Howard
Staley, James
*Sisken, Morris
*McCoy, Wm. E.
Schmidgall, Frank
*Bailey, Homer

Laundresses.

Bratton, Sarah
*Garbaczeska, Mary
*Hutton, Mrs. Anna
*Krosnoslika, Pauline
*Panasczyuk, Ewa
Stout, Mrs. Lillian
*Stryczk, Kyjda
*Teliczuk, Anna
*Emery, May
*Gillespie, Sabina
*Baker, Meda
*Sabran, Ena
Henry, Hettie
*Ruhf, Mrs. Franklin E.
*Carbaugh, Edna
Kulengorsky, Anna
Riley, Margaret
Wychulis, Mary
*Bingaman, Luttrische
*Paliodsky, Violet
Misuewicz, Mylie
Salutsky, Mary
Salutsky, Minnie
Baker, Ethel
Detter, Edna
Carbaugh, Daisy
Carabaugh, Emma
*Carbaugh, Alice
*Carbaugh, Elizabeth
Kauffman, Myrtle
Kauffman, Zella
*Kauffman, Stella
*Mathiewson, Mabel
*Sprow, Emma G.
*Verdier, Anna
*Wagaman, Julia
Wagaman, Fannie
Wagaman, Catherine
*Wagaman, Maria
*Baker, Polly
*Butler, Irene
*Almosdi, Mary
Carbaugh, Rebecca
Strang, Ida

Miscellaneous.

O'Shea, John, camp foreman
Argenbright, John, tinsmith
*Boyle, Michael, N. watchman, L. pump house
Carbaugh, Ben, fireman, disposal plant.
*Crowe, Frank, assistant on truck.
*Cantlin, James, driver, refuse wagon.
*Elsesser, Gus, pump runner, Station No. 2
Feldman, Robert, plumber
Franklin, John, driver
Gibson, Richard, gardener
Kauffman, Walter, driver
Loucks, George, stableman
Michael, Clark, steam fitter
Naugle, Grover, fireman, hospital
Naugle, Edward, steam fitter
Naugle, Wm., steam fitter's helper
Ostop, John, laborer at filter plant
Purcell, J. J., chauffeur
Rupert, C. M., blacksmith
*Remington, Harold, fireman at bath house
Schuck, Theodore, truck driver
Sebruary, George, canwasher
Staley, George W., fireman at hospital
*Verdier, Arthur, carpenter
*Weiss, Harry, pump runner at Station No. 2
Wagaman, William, fireman at hospital

*Resigned.

Wagaman, David, driver
*Richards, Henry, driver (laundry wagon)
*McNew, Wm., night watchman
Moser, George A., painter
Wagaman, Enoch, fireman, hospital
*Kirschberg, Chas., fireman, bath house
Perniche, Antonio, driver, refuse wagon
Collins, Thomas, fireman, bath house
McCoy, Wm. E., driver, laundry wagon
*Garrett, J. Addison, timekeeper
*Duffy, W. J., N. watchman, L. P. station

Employed During the Month of December (Broken Time).

Bailey, John
Bailey, Daniel
Baker, Maurice
Baker, Calvin
Baker, Jesse
Baker, Peter
Barnes, Oscar
Baronowske, Frank
Butler, Oscar
Butler, David, Jr.
Carabaugh, Daniel
Carbaugh, Jerry
Cullison, D. T.
Cuastascu, Nicolaic
Daywalt, Oliver
Kauffman, Jacob
Kauffman, Lewis
Kauffman, L. E.
Martin, Harry
Martin, Reuben
Martin, W. W.
Marshalac, Joseph
Naugle, John
Naugle, Harry
Null, Joseph
Rock, George
Staley, Stephen
Staley, George A.
Staley, Wm. E.
Staley, A. J.
Staley, W. H.
Simth, H. E.
Verdier, W. L.
Wagaman, Andrew
Wagaman, Jacob
Truston, Peter
Smith, Archie

Firemen.

Staley, Dan
Bailey, Homer
Strang, Jacob
Staley, Samuel
Staley, Howard
Kauffman, Harry
Baker, Harry

Carpenters.

Kauffman, David
Kauffman, George W.
Kauffman, Levi,
Trace, Edward L.
Verdier, Arthur

Printer.

Moser, Oscar.

*Resigned.

PENNSYLVANIA STATE SANATORIUM FOR TUBERCULOSIS NO. 2, CRESSON.

Medical Director:—William G. Turnbull, M. D.,
Philadelphia.
First Assistant Physician:—M. E. Cowen, M. D., Greens Farms, Conn.
Assistant Physicians.

*Brachman, D. S., M. D., Philadelphia.
Gracey, Chas. S., M. D., Everett, Bedford County.
*Levy, Joseph I., M. D., Philadelphia.
Schwatt, Lina D., M. D., Philadelphia.

Consulting Surgeon:—Joseph D. Findley, M. D., Altoona, Blair County.
Visiting Laryngologist:—S. P. Glover, M. D., Altoona, Blair County.
Storekeeper:—George Chandler Metzgar, Philadelphia.
Master Mechanic and General Foreman:—W. L. Fry, Ridgway, Elk County.
Head Nurse:—Miss E. C. Allison, Philadelphia.
Stenographers:—Miss Cecelia Conrad, Loretto, Cambria County.
Miss Mary E. Irvin, Waynesboro, Franklin County.
Matron and Stewardess:—Miss Rose P. Campbell, Philadelphia.
Assistant Matron:—Miss Mary R. Cheslock, Gallitzin, Cambria County.
Teacher:—Miss Lottie L. Martin.

Nurses.

Carrie Archey
Mary R. Byrnes
Edna Casselberry
Grace Dorsey
*M. Nellie Eichenlaub
Hedwig E. Ernst
*May Agnes Earley
Marion K. Ford
*Elizabeh Fowler
Margaret M. Healy
Mary A. Isenberg
*Mary A. Kelly
*Ronie M. Kerstetter
Ella Kilgore
Maude Lellier
*Alma Lutz
Elizabeth R. Moore
Esther A. Moser
*Lillian B. Noone
Mary G. O'Donnell
*Louise E. K. Rose
Anna M. Stover
*Nellie M. Tidd
Gertrude E. Wise

Waitresses.

Lela Bolger
*Bessie Burns
*Emma Banks
Annie Coanshock
*Ella Crynock
*Mary M. Cheslock
*Mary Chisko
Eva Durna
*Margaret I. Douglass
*Mary Eger
*Mary Gnap
*Florence Horan
*Meri Hroca
Irene Haupt
Virginia Haupt
*Mary Kristen
Rose Koticki
Helen Krouse
*Rachael Johnson
Annie Lafferty
*Ethel Lenhart
*Mary Lilly
*Helen Lonergan
Julia Misinek
Vera Morehead
Hazel Morehead
Annie McTigue
Nellie Myris
Marie McDermott
Annie Novak
Mary Orlosky
Rose Orlosky
*Mary Pietzsch
*Annie Plummer
Marie Prantil
Sophia Priszchola
Madeline Schook
Kate Stanley
Alice Stefanowicz
*Agnes Sutton
*Iva Sutton
*Cecelia Sherrick
Mary Stephens
*Annie Schall
*Anna Stanley
Annie Surmick
*Julia Thomas
Mary Vangreen
*Annie Walaszek
*Mary Wozna
*Mary Wagner

*Resigned.

Scrubbers.

*Aniela Borowa
*Kato Bodaes
Anna Beltrouska
*Suzi Dzamba
Pauline Fuller
*Anna Guzak
*Helen Horlocker
*Annie Mesarch
Anna Miller
Zuzanna Murgas
*Mary Nighborowic
Mary Obula
Mary Sinkowski
Veronica Sihelnik
*Annie Stupanick
*Mary Radela
*Mary Thomas
*Margaret Vargo
Gondy Urbanic
Mary Witcore
*Victoria Ziglin

Cooks.

Chas. H. Thompson, chef
John Gubale
*Ethel Meese
*Mary Platt
Elizabeth Eger
Anna Brasington
Ethel Lenhart
*Agnes Parrish

Kitchen Helpers.

Chas. Ihnat
John Ihnat
Joseph Ihnat
Stanley Koss
*Winton Koss
*Katie Comstock
*Wm. Burke
Gondy Mastalsky
Jake Obszewski
Annie Rex
*Chalij Lapij

Butcher.

D. C. Burke

Chambermaids.

Rose Babab
*Kato Bodaes
*Anna Beltowska
Rose Conway
Mary Eger
Lorena Thompson
*Annie Schall
*Mary Witcore
*Margaret Vargo

Vegetable Peelers.

Katie Comstock
Annie Prantil
*Mary Obula

Laundry Manager, Etc.

Rose Adams
*Chas. Adams (washer)
*Emma Banks (sorter)
*Mary M. Cheslock (laundress)
Annie Dzielsko
*Julia Driestsic
*Annie Dikun
Mary Balbieyreick
Eva Durna
Marie Hughes
Verna Cowan
*Kijdy Himel (laundress)
Aniela Himel
Meri Hovanjsis
*Rachael Johnston
*Meri Kochan
*Victoria Leglon
Mary Nighborowic
Louis Shinko
Grace Slowik
July Tomala
*Helen Wian

*Resigned.

Miscellaneous.

Joseph Bolger, asst. master mechanic
*C. J. Delozier, machinist
M. J. McDonough, plumber
Thomas Bradley, engineer P. & L.
Ed. P. Shannon, engineer P. & L.
*J. A. Benden, fireman P. & L.
Wm. Dobbie, fireman P. & L.
Oscar M. Hertzog, fireman P. & L.
*A. J. McCarthy, fireman P. & L.
H. E. Nagle, fireman P. & L.
James Drury, ice plant engineer.
W. B. Tubbs, disposal plant operator
Richard Eger, teamster
*Thos. Eger, teamster
C. J. Freidhof, teamster
*Frank Hartline, teamster
J. A. Nagle, teamster
*H. E. Steak, teamster
*L. M. Stevens, teamster
*P. J. Wiley, teamster
Geo. W. Alters, truck driver
*Chas. Klemstine, truck driver
*Lother Heym, gardener
Michael Byrne, cellerman
A. Parrish, canwasher
*Chas. Tyson, poultryman
Geo. V. Askew, poultryman
Homer Glass, asst. poultryman
Wm. F. Sheppard, burning garbage and making soap
*Castner Bowers, stableman
Joseph Shultz, stableman
*William Conklin, pumprunner
R. S. Dull, pumprunner
Nels Johnson, pumprunner
*Elwood Crawford, watchman
*Mark Connell, watchman
*Martin Johnson, watchman
*Frank Costlow, watchman
*S. Stevens, watchman
John Patz, watchman

Orderlies.

M. Polonsky, head orderly
Harold Albright
John Allison
*William Adams
*Chas. Banks
*Herman Bloch
*Oscar Bender
*Francis Bracken
*Wm. Barrett
*James Corry
*Henry Commers
Patrick Clark
Steve Christmas
*Ralph Dull
*Gerald Dolan
*Howard Duganne
*Fred W. Dasen
Joseph Fera
Chas. Fike
Geo. Fulmer
*Wm. Fisher
*Eric Forsberg
*Wm. T. Gee
*Fed Gluck,
*Robert Hoehl
*Chas. Hugg
Jos. Hall
*Frank Komaitis
*Andrew Layshock
*Chester Lybarger
Chas. Little
Francis Larkin
Adolph Marks
*R. I. Matthews,
*Clinton Moore
*Samuel McBride
Lawrence O'Toole
*Stanley Rolley
*James Parker
Everett Piper
Izidore Serenko
Clarence Stuck
*John Sheehan
*Rudolph Stepita
*Michael Toniko
*Wm. Turpe
Frank Thompson
James Ursini
*Robert Wilson
*John Weber
*Edward Walters

Gatekeepers.

*Frank Haslage
*Thos. Kane

*Resigned.

Wardmaids.

*Hulda Aggas
Stella Alexander
Lillie Beck
Mary Burgman
Myrtle Boyce
*Mary Brinton
*Lucy Burke
*Anna Boyle
*Fern Bellis
*May Chapman
Jean Crockett
*Ella Cogley
*Gladys Chapman
*Anna Dubin
*Florence Dawson
Elsie Fleming
Bertha Graf
*Iva Hinton
*Mae Harbaugh
*Clara Hobaugh
Vera Guiler
Sarah Jackson
*Sarah Keyes
*Pearl Kratzer
*Clara Kirkpatrick
*Grace Lytle
*Effie Logan
Ethel Kunes
*Marie Nicolis
*Mary O'Brien
Loas Porter
Bridget Potoski
Minnie Reber
*Anna Rook
*Emma Rainey
Emma Seigrist
*Emma Steele
*Edith Swinbank
Pearl Slater
Bessie Sherman
Natalie Schmidt
Mary Sickles
Rebecca Till
*Alice Vanden Bosche
Helen Walsh
Anna Winberg

Telephone Operators.

*Mary Corbett
*Helen Clegg
*Mae Erhard
*Stella Dobbins
Nellie Flynn
*Alma Oyler
Agnes Moore

Seamstresses.

*Ella McKeon
Stella Sherman
Alice Hastings

*Resigned.

PENNSYLVANIA STATE SANATORIUM FOR TUBERCULOSIS NO. 3, HAMBURG.

Medical Director:—Thos. H. A. Stites, M. D.,
Nazareth, Northampton County.
Deputy Medical Director:—B. A. McDermott, M. D., Philadelphia.

Assistant Physicians.

Ray Vera Zabarkes, M. D., Philadelphia.
Abraham Epstein, M. D., Philadelphia.
Bernard C. Healey, M. D., Summerhill, Cambria County.
*Paul E. Schwarz, M. D., Easton, Northampton County.
*Ray D. Saul, M. D., Harrisburg, Dauphin County.
*Charles E. McPeek, M. D., Chicago, Ill.

Consulting Surgeon:—George B. Kunkel, M. D., Harrisburg, Dauphin County.
Consulting Laryngologist:—Charles S. Rebuck, M. D., Harrisburg, Dauphin County.
Visiting Laryngologist:—Joseph A. Stockler, M. D., Reading, Berks County.
Stenographers:—Nelle M. Kissinger, Carlisle, Cumberland County.
Viola MacGowan, Bryn Mawr, Montgomery County.

Matron:—Mary A. Mentz, Williamsport, Lycoming County.
Master Mechanic:—Walter E. Wanner, Ridgway, Elk County.
Assistant Mechanic:—Charles J. Delozier, Summit, Cambria County.
*W. H. Adams, Harrisburg, Dauphin County.

Nurses.

Head Nurse:—Ella E. Read, Philadelphia.

Staff Nurses.

Marie C. Bettig
Frances Black
Ethel G. Brown
Anna Campbell
Alice Cochran
Elizabeth Collins
Mary E. Dougherty
Hella-Hedwig Feldmueller
Bessie German
Mary A. Johnson
Christian Lawrence
Gertrude S. Lee
Ida S. Longacre
Mary McMonagle
Elizabeth Ramsden
Mary Alice Roberts
Elizabeth Ruppert
Sara Sailer
Elizabeth Seubert
Mary Aitkin
Besse Fowler

Resigned Nurses.

Emily Ellis
Selina Wilder
Cornelia H. Parker
Frances Hinton
Bertha Henry
Agnes Macpherson
Mary S. Eckhardt
Adele Macquilkan
Julienne Schlegel
Viola Kennedy
Irene Herwig

Substitute Nurses.

Ella Long
May Campbell

Kitchen.

Neil Shannon, chef
Wellington C. Bowers
Thomas Emanuel
Mancini Pio
Domenico Crezinco
Eugene Fink
George Sachko
Mary L. Sculley, cook
Mary Tobin
Susan G. Sipe
Margaret Poland
Leo S. Sholley
Samuel Gentile

Waitresses.

Head Waitress, Jennie Sellers

Cathryn Berkheiser
Mary Boran
Josephine Coglitore
Minnie Dickson
Anna Foley
Mary Frank
Mary Gately
Mary Horan
Stella Javelle
Florence Kennedy
Ellie Korsak
Helen Leiby
Rose McDermitt
Helen Malinowsky
Mary Pietzsh
Sallie Rentschler
Anna Ryan
Esther Scheirer
Mary Shuckes
Alverta Snyder
Bertha Strenkofsky
Victoria Vanavege
Edith Wells
Ida Young

*Resigned.

Cleaners.

Mary Fisher
Mary Fesig
Tillie Heishley
Rose Pawynuczk
Mary Ryan
Margaret Samanis
Helen Dimiterchik
Estella Shugar
Mary E. Souders
Mary Ziankucky
Margaret Lesky
Josephine Roshko
Susie Wilkofski
Mary Martusus

Chambermaids.

Alda E. Grubb
Etta Snyder

Laundry.

Joseph A. Anders
Morris Beahr
Joe Locke
Mac Ramsey

Laundresses.

Laura Bolton
Lizzie Fesig
Marian Hoopes
Anna Kennedy
Mary Kuczmarski
Minerva Nye
Mildred Seilhamer
Frances Stabinsky

Electrician.

H. H. Myers

Plumbers.

J. Milton Haller
*Joseph P. Sheridan

Carpenter.

Charles Epler

Refrigeration Engineer.

A. Harry Shollenberger

Engineers.

John W. Gehret
Silas P. Seip
*John W. Allamong

Firemen.

D. S. Wagner
Milton J. Wohlfinger
Wellington Heim

Coal Passer.

Clarence Romberger.

Disposal Plant Engineer.

Frank V. Fichthorn.

Pump Runners.

Warren Towsen
James R. Carson
Edgar E. Dey

Chauffeurs.

Robert Gehringer
Quintus A. Sourwine
*Homer J. Hagy

Assistant on Truck.

George Bailey

Storekeeper.

John S. Meharg

Pharmacist and 1st Assistant Storekeeper.

Warren R. Seidel.

*Resigned.

Cellermen.

Albert J. Dunkle — Jacob Rubright
Charles D. Ingalls

Telephone Operators.

Marian Henne — Ellen Egolf
Irwin J. Noll

Watchmen.

John Smith — John Freeman

Bakers.

*Gottlieb Ruggaber — Pietro Dilluvio

Butcher.

Samuel Dunkle

Farm.

John Baum, foreman — Domenico Mazzoni
Guiseppe Mazzoni — Raymond A. Wile
Samuel L. Bradford — Filippo Vallese

Seamstresses.

Sallie Foreman — Edith Davis

Ruth Foreman, substitute seamstress

Wardmaids.

Minnie Rheiner — Blanche Wilson
Marcella Bye — Ella Hoster
Ella Stover — Sarah Gleinert
Gertrude Mills — Marie Nolan

Head Orderlies.

*George V. Penzes — Robert W. Lindsay
*Rodman Lees

Staff Orderlies.

Earl Charles — Angelo Rosso
Frank Coglitore — John Robac
George Critchen — Penrose Smith
William Curran — Julius Stovascik
Francis Gutsell — Stanko Tarabic
Adolph Johnson — Adam Toloczko
Raymond Magan — Thomas Ward
William Miller

Time Keeper.

Karl H. Gasser

*Resigned.

DIVISION OF DISTRIBUTION OF BIOLOGICAL PRODUCTS.

Chief:—J. Moore Campbell, M. D.,
Philadelphia.

Bookkeeper:—Miss Mabel E. Thorn, Gettysburg, Adams County.

Stenographers:—Miss Edna M. Knisely, Eberly's Mill, Cumberland County.
Miss E. Manon Lingle, Harrisburg, Dauphin County.

Clerks:—Mrs. Belle M. Weible, Tidioute, Warren County.
Mrs. H. C. Schimmelfeng, Grove City, Mercer County.

DISTRIBUTORS OF DIPHTHERIA ANTITOXIN.

Note: The distribution of *Tetanus Antitoxin* is also entrusted to those persons of this list whose names are marked with an asterisk.

Distributor.	Place.	County.
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H. W. Poorman,	Braddock,	Allegheny.
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Sloane's Pharmacy,	Duquesne,	Allegheny.
E. H. Shaffer,	Elizabeth,	Allegheny.
McClaran's Pharmacy,	Glassport,	Allegheny.
J. L. Paules,	Homestead,	Allegheny.
H. W. Scott,*	McKeesport,	Allegheny.
L. W. Ritzi,	McKees Rocks,	Allegheny.
J. W. Hyde, Jr.,	Millvale,	Allegheny.
H. A. Urben,	Mt. Oliver,	Allegheny.
Diamond Pharmacy,	Natrona,	Allegheny.
W. J. Weyels,	North Braddock,	Allegheny.
Claude W. Hood,	Oakmont,	Allegheny.
Milo M. Haymaker & Co.,	Pitcairn,	Allegheny.
A. C. Walker,	Sewickley,	Allegheny.
S. D. Myers,	Sharpsburg,	Allegheny.
Frank H. Hanna,	Springdale,	Allegheny.
S. A. Stright,	Swissvale,	Allegheny.
George H. Whitehouse,	Tarentum,	Allegheny.
Sprowl's Pharmacy,	Turtle Creek,	Allegheny.
W. S. Whiteley,	Verona,	Allegheny.
S. W. Covell,	Wilkinsburg,	Allegheny.
Frank T. Wray,	Apollo,	Armstrong.
J. S. Sutton,	Dayton,	Armstrong.
Sturgeon & Means,	Ford City,	Armstrong.
James E. Williams,	Freeport,	Armstrong.
(Temporary vacancy),	Goheenville,	Armstrong.
W. J. Sturgeon,*	Kittanning,	Armstrong.
J. H. Parks & Son,	Leechburg,	Armstrong.
A. M. Hoover,	Parker's Landing,	Armstrong.
Valley Drug Store,	Rural Valley,	Armstrong.
W. E. Schoffner,	Templeon,	Armstrong.
(Temporary vacancy),	Aliquippa,	Beaver.
Thomas Fitzgerald,	Ambridge,	Beaver.
Fred H. Mayo,*	Beaver,	Beaver.
W. A. Hoffman,	Beaver Falls,	Beaver.
W. I. Bebout,	Darlington,	Beaver.
W. A. Anderson,	Hookstown,	Beaver.
Miss A. B. Todd,	Industry,	Beaver.
H. L. Guthrie,	Midland,	Beaver.
Walter D. Kaye,	Monaca,	Beaver.
H. L. Schweppe,	New Brighton,	Beaver.
W. T. Gordon,	Rochester,	Beaver.
F. W. Jordan, Jr.,*	Bedford,	Bedford.
A. L. Tewell,	Chaneysville,	Bedford.
Grubb & Weimer,	Clearville,	Bedford.
Joseph X. Conley,	Everett,	Bedford.
Hopwell Pharmacy,	Hopewell,	Bedford.
C. R. Rhodes,	Hyndman,	Bedford.
H. I. Shoenthal,	New Paris,	Bedford.
Shaffer & Conrad,	Osterburg,	Bedford.
Saxton Drug Store,	Saxton,	Bedford.
Irvin C. Stayer,	Woodbury,	Bedford.

Distributors of Diphtheria Antitoxin—Cont'd.

Distributor.	Place.	County.
Nicholas J. Hoffman,	Birdsboro,	Berks.
Claude E. Graeff,	Boyertown,	Berks.
Charles C. Schomo,	Hamburg,	Berks.
E. J. Sellers,	Kutztown,	Berks.
Carl H. Ege,	Reading,	Berks.
W. P. Ireland,	Reading,	Berks.
William H. Raser,*	Reading,	Berks.
(Temporary vacancy),	Topton,	Berks.
F. T. Landis,	Womelsdorf,	Berks.
W. D. Davis,	Altoona,	Blair.
C. S. Taylor,*	Altoona,	Blair.
N. A. Grauer,	Bellwood,	Blair.
Jerry W. Leedom,	Duncansville,	Blair.
John P. Jacobs,	Hollidaysburg,	Blair.
C. N. Johnson,	Martinsburg,	Blair.
R. A. Lambert,	Roaring Spring,	Blair.
G. C. Boecking,	Tyrone,	Blair.
W. H. McLanahan,*	Tyrone,	Blair.
D. T. Ketring,	Williamsburg,	Blair.
E. O. Francke,	Athens,	Bradford.
G. Ernest Newman,	Canton,	Bradford.
John E. Passmore,	Gillett,	Bradford.
Laquin Lumber Co.,	Laquin,	Bradford.
F. T. Billings & Son,	Le Raysville,	Bradford.
F. F. Lomax,	Monroeton,	Bradford.
Ray S. Wilson,	New Albany,	Bradford.
Lester Gillette,	Towanda,	Bradford.
E. P. Kester,*	Towanda,	Bradford.
H. D. Jump,	Sayre,	Bradford.
Carpenter & Pierce,	Troy,	Bradford.
Allis Pharmacy,	Wyalusing,	Bradford.
Howard Pursell,*	Bristol,	Bucks.
Estate of Martin Hulshizer,*	Doylestown,	Bucks.
William B. T. Pryor,	Langhorne,	Bucks.
Frank C. Pryor,	Morrisville,	Bucks.
H. H. Cornell,	Newtown,	Bucks.
C. R. Middleton,	New Hope,	Bucks.
J. Richard Sterner,	Perkasie,	Bucks.
Howard R. Moyer,	Quakertown,	Bucks.
H. W. Johnson,	Riegelsville,	Bucks.
O. L. Metzler,	Sellersville,	Bucks.
H. L. Bassett,	Yardley,	Bucks.
John Cheeseman,	Branchton,	Butler.
A. J. Edmonds,	Bruin,	Butler.
Redick and Grohman,*	Butler,	Butler.
J. D. Thomas,	Evans City,	Butler.
Robert McGary,	Mars,	Butler.
E. B. Mershon,	Saxonburg,	Butler.
W. J. Maybury,	Slippery Rock,	Butler.
H. C. Hindman,	West Sunbury,	Butler.
C. E. Reed,	Zelienople,	Butler.
G. W. Krumbine,	Ashville,	Cambria.
H. A. Morris,	Barnesboro,	Cambria.
J. R. George,	Beaverdale,	Cambria.
L. B. Bland,	Blandburg,	Cambria.
Cyrus W. Davis,	Conemaugh,	Cambria.
E. L. Study,	Cresson,	Cambria.
W. G. Turnbull,	Cresson,	Cambria.
E. James & Son,*	Ebensburg,	Cambria.
W. O. Keffer,	Frugality,	Cambria.
K. A. Reed,	Gallitzin,	Cambria.
James Commons & Son,	Hastings,	Cambria.
Kabler Drug Co.,	Johnstown,	Cambria.
Jacob Ringold,*	Johnstown,	Cambria.
Elmer G. Keene,	Johnstown (Dale),	Cambria.
G. I. Yearick,	Lilly,	Cambria.
W. A. B. Little,	Loretto,	Cambria.
John A. Gunn,	Patton,	Cambria.
R. L. Houck,	Portage,	Cambria.
South Fork Pharamacy,	South Fork,	Cambria.
Scalp Drug Co.,	Scalp Level,	Cambria.

Distributors of Diphtheria Antitoxin—Cont'd.

Distributor.	Place.	County.
Brookbank Mer,	Driftwood,	Cameron.
Emporium Drug Co.,*	Emporium,	Cameron.
Council Brothers,	Sinnemahoning,	Cameron.
Estate of A. S. Van Wickle,	Beaver Meadow,	Carbon.
J. W. Zelt,	East Mauch Chunk,	Carbon.
Howard Albert,	Lansford,	Carbon.
Charles H. Wagner,	Lehighton,	Carbon.
Mauch Chunk Pharmacy,*	Mauch Chunk,	Carbon.
Charles J. Bechtel,	Nesquehoning,	Carbon.
J. H. Browell,	Palmerton,	Carbon.
Thomas E. Davis,	Summit Hill,	Carbon.
W. P. Long,	Weatherly,	Carbon.
Green's Phramacy Co.,*	Bellefonte,	Centre.
H. A. Dodson,	Centre Hall,	Centre.
H. A. Moore,	Howard,	Centre.
Thomas F. Meyer,	Millheim,	Centre.
William Melick,	Philipsburg,	Centre.
William A. Sickel,	Snow Shoe,	Centre.
Ray Gilliland,	State College,	Centre.
Thomas C. Marshall,	Avondale,	Chester.
James Aiken,	Berwyn,	Chester.
W. S. Young,	Coatesville,	Chester.
David W. Hutchison,	East Downingtown,	Chester.
L. S. Corson,	Glen Moore,	Chester.
A. W. LeVan,	Honey Brook,	Chester.
George R. Walton,	Malvern,	Chester.
Thompson Hudson,	Oxford, R. D.,	Chester.
C. B. McCullough,	Oxford,	Chester.
Walter E. Ruch,	Parkesburg,	Chester.
H. H. Dancy,	Phoenixville,	Chester.
W. C. Taylor,	Spring City,	Chester.
Jesse Thatcher,*	West Chester,	Chester.
Frank P. Houston,	West Grove,	Chester.
Reid's Drug Store,	Clarion,	Clarion.
S. S. Gathers,	Curllsville,	Clarion.
R. J. Greer,	East Brady,	Clarion.
Hawthorn Drug Co.,	Hawthorn,	Clarion.
W. H. Whitling,	Knox,	Clarion.
G. W. Kuhns,	Leeper,	Clarion.
W. W. Corbett,	New Bethlehem,	Clarion.
J. W. Kerr,	Rimersburg,	Clarion.
J. S. Craig,	St. Petersburg,	Clarion.
Snyder's Pharmacy,	Shippenville,	Clarion.
L. R. McKee,	Sligo,	Clarion.
Woodward & McPherson,*	Clearfield,	Clearfield.
W. C. McCartney,	Coalport,	Clearfield.
W. K. Wrigley,	Curwensville,	Clearfield.
G. W. S. Humphreys,	DuBois,	Clearfield.
Glen Richey Trading Company,	Glen Richey,	Clearfield.
J. Currier,	Grampian,	Clearfield.
Phoenix Drug Store,	Houtzdale,	Clearfield.
J. S. Flegal,	Karthaus,	Clearfield.
S. J. Miller,	Madera,	Clearfield.
Alex D. Lydic,	Mahaffey,	Clearfield.
H. C. Shugert,	Morrisdale Mines,	Clearfield.
S. M. Irvin,*	Osceola Mills,	Clearfield.
J. P. Spackman,	Peale,	Clearfield.
Tyler Mercantile Company,	Tyler,	Clearfield.
Winburne Pharmacy,	Winburne,	Clearfield.
George H. Tibbins,	Beech Creek,	Clinton.
Graydon D. Mervine,	Bitumen,	Clinton.
Frank Waitz,	Flemington,	Clinton.
Hilton & Heffner,*	Lock Haven,	Clinton.
Valley Drug Store,	Mill Hall,	Clinton.
G. C. & C. Slack,	Renovo,	Clinton.
Pennington & Seely,	Benton,	Clinton.
Pennington & Seely,	Benton,	Columbia.
Clewell & Currin,	Berwick,	Columbia.
George P. Ringler,	Bloomsburg,	Columbia.
John Waters & Company,	Catawissa,	Columbia.
John W. Goldsworthy,	Centralia,	Columbia.
H. V. Hower,	Mifflinville,	Columbia.
Charles S. Ely,	Millville,	Columbia.

Distributors of Diphtheria Antitoxin—Cont'd.

Distributor.	Place.	County.
F. A. Knowlton,*	Cambridge Springs,	Crawford.
J. A. Rodier & Son,	Centerville,	Crawford.
George Stratton,	Linesville,	Crawford.
F. K. Easterwood,*	Meadville,	Crawford.
Allen & Rexford,	Spartansburg,	Crawford.
Fisher & Fisher,	Springboro,	Crawford.
Wilkins & Kemble,	Titusville,	Crawford.
W. R. Shearer,	Carlisle,	Cumberland.
R. H. Holmes,	Enola,	Cumberland.
G. H. Lucas,	Mechanicsburg,	Cumberland.
Snyder's Drug Store,	Mt. Holly Springs,	Cumberland.
Good's Pharmacy,	New Cumberland,	Cumberland.
R. B. Claudy,	Newville,	Cumberland.
Fleming & Fleming,	Shippensburg,	Cumberland.
A. C. Coble,	Dauphin,	Dauphin.
(Temporary vacancy),	Derry Church,	Dauphin.
J. Lyter,	Elizabethville,	Dauphin.
W. E. Lebo,	Gratz,	Dauphin.
A. M. Smith & Co.,	Halifax,	Dauphin.
F. J. Althouse,	Harrisburg,	Dauphin.
E. Z. Gross,*	Harrisburg,	Dauphin.
John W. Hay,	Harrisburg,	Dauphin.
J. Irwin Ruff,	Hummelstown,	Dauphin.
O. B. Leese,	Linglestown,	Dauphin.
W. G. Smith,	Lykens,	Dauphin.
C. S. Few,	Middletown,	Dauphin.
J. W. Starr,	Millersburg,	Dauphin.
D. A. Peters Estate,	Steelton,	Dauphin.
John H. Kuntz,	West Hanover,	Dauphin.
T. B. Davis Estate,	Williamstown,	Dauphin.
A. L. Castle,	Chester,	Delaware.
J. H. Rea,	Chester,	Delaware.
Concordville Supply Company,	Concordville,	Delaware.
Harlan Cloud,	Darby,	Delaware.
M. R. Cady,	Eddystone,	Delaware.
Harry M. Davis,	Lansdowne,	Delaware.
Perry & Son,	Llanerch,	Delaware.
Ellis Pharmacy,	Media,	Delaware.
V. C. Shirer,	Swarthmore,	Delaware.
H. B. Hayes,	Upland,	Delaware.
H. C. Hadley,	Wayne,	Delaware.
Shawmut Commercial Company,	Byrnedale,	Elk.
Hiram Whitcomb & Son,	Dent's Run,	Elk.
J. G. Barr,	Hallton,	Elk.
V. R. Smith,	Johnsonburg,	Elk.
Ross Drug Company,*	Ridgway,	Elk.
F. A. Luhr,	St. Marys,	Elk.
Shawmut Commercial Company,	Shawmut,	Elk.
John Amend,	Wilcox,	Elk.
A. C. Newman,*	Albion,	Erie.
N. F. Ames & Company,*	Corry,	Erie.
Brick Drug Company,	Edinboro,	Erie.
W. C. Andrews,*	Erie,	Erie.
E. H. Tinklepaugh,	Girard,	Erie.
R. D. Anderson,	North East,	Erie.
William Gates,	Union City,	Erie.
John H. C. Keemer,	Wattsburg,	Erie.
H. H. Bulger & Company,	Brownsville,	Fayette.
Frank Huston,	Connellsville,	Fayette.
Dawson Pharmacy,	Dawson,	Fayette.
W. G. Dunaway,	Fairchance,	Fayette.
Williams Pharmacy,	Fayette City,	Fayette.
F. J. Connell,	Masontown,	Fayette.
Kendall Lumber Company,	Ohiopyle,	Fayette.
E. S. Tyler,	Point Marion,	Fayette.
G. A. Feather,	Smithfield,	Fayette.
Rathmell Borthers,	South Brownsville,	Fayette.
R. E. Springer,*	Uniontown,	Fayette.
F. E. Oglevee,	Vanderbilt,	Fayette.
C. Y. Detar,	Kellettville,	Forest.
William Heasley,	Lynch,	Forest.
A. D. Neill & Company,	Marienville,	Forest.

Distributors of Diphtheria Antitoxin—Cont'd.

Distributor.	Place.	County.
Mayburg Supply Company,	Mayburg,	Forest.
Ross A. Walker,*	Tionetsa,	Forest.
W. G. Morrow,	West Hickory,	Forest.
J. O. Montgomery,	Chambersburg,	Franklin.
Skinner & Haller,	Chambersburg,	Franklin.
J. F. Brinley,	Dry Run,	Franklin.
Charles B. Carl,	Greencastle,	Franklin.
Harry B. Krebs,	Mercersburg,	Franklin.
Fred C. Johnson,	Mont Alto,	Franklin.
D. L. Miller & Company,*	Waynesboro,	Franklin.
C. J. Barton,	Hustontown,	Fulton.
Leslie W. Seyler,*	McConnellsburg,	Fulton.
N. G. Cunningham,	New Grenada,	Fulton.
J. E. Palmer,	Warfordsburg,	Fulton.
A. J. Gibbons,	Carmichaels,	Greene.
C. H .Day,	Clarksville,	Greene.
James McGuffie,	Deep Valley,	Greene.
G. W. Hatfield,	Mt. Morris,	Greene.
W. O. Kline,	Rice's Landing,	Greene.
Ullom & Bailey,*	Waynesburg,	Greene.
Brumbaugh & Company,	Aitch,	Huntingdon.
Harry R. Grove,	Alexandria,	Huntingdon.
P. W. Richardson,	Birmingham,	Huntingdon.
H. E. Steel,*	Huntingdon,	Huntingdon.
A. M. Parker,	Mapleton Depot,	Huntingdon.
J. M. Minnick,	Mount Union,	Huntingdon.
E. O. Heck,	Orbisonia,	Huntingdon.
Miners & Farmers Supply Company,	Robertsdale,	Huntingdon.
F. K. Mattern,	Warriors Mark,	Huntingdon.
A. L. Freed,	Arcadia,	Indiana.
H. M. Elliott,	Armagh,	Indiana.
John M. Wilson Estate,	Blairsville,	Indiana.
H. T. Ross,	Brush Valley,	Indiana.
Clymer Pharmacy,	Clymer,	Indiana.
F. A. Rice,	Dixonville,	Indiana.
W. S. Martz,	Glen Campbell,	Indiana.
J. B. Eck,	Heilwood,	Indiana.
J. A. Fleming,	Homer City,	Indiana.
Elmer W. Allison,*	Indiana,	Indiana.
Will C. Griffith,	Marion Center,	Indiana.
T. D. Stephens,	Penn Run,	Indiana.
E. Green,	Plumville,	Indiana.
H. W. Oberlin,	Rochester Mills,	Indiana.
J. A. Pearce,	Rossiter,	Indiana.
Elmer E. Goodlin,	Saltsburg,	Indiana.
W. W. Harbison,	Shelocta,	Indiana.
Adam Black,	Smicksburg,	Indiana.
T. S. Neal,	Trade City,	Indiana.
A. J. Malburg,	Anita,	Jefferson.
Schwab's Pharmacy,	Big Run,	Jefferson.
G. H. Humphreys,	Brockwayville,	Jefferson.
Craig Drug Company,*	Brookville,	Jefferson.
Abbott & Blackslee,	Coal Glenn,	Jefferson.
M. J. Kunselman,	Coolspring,	Jefferson.
Mahoning Supply Company,	Eleanor,	Jefferson.
J. M. Cools,	Hamilton,	Jefferson.
Smail & Bruner,	Knoxdale,	Jefferson.
Burkett's Drug Store,	Punxsutawney,	Jefferson.
S. S. Hamilton,	Punxsutawney,	Jefferson.
H. A. Stoke,	Reynoldsville,	Jefferson.
People's Supply Company,	Summerville,	Jefferson.
Tyler Mercantile Company,	Sykesville,	Jefferson.
J. B. McMeen,	East Waterford,	Juniata.
W. H. Banks & Company,	Mifflin,	Juniata.
Charles E. Walley,*	Mifflintown,	Juniata.
Heckerman's Drug Store,	Port Royal,	Juniata.
W. H. Haines,	Thompsontown,	Juniata.
M. A. Foote,	Archbald,	Lackawanna.
F. E. Gramer,	Carbondale,	Lackawanna.
T. A. Purdon,	Dalton,	Lackawanna.
T. A. Shannon,	Dickson City,	Lackawanna.

Distributors of Diphtheria Antitoxin—Cont'd.

Distributor.	Place.	County.
J. G. Bone & Company,	Dunmore,	Lackawanna.
J. M. & F. M. Graves,	Jermyn,	Lackawanna.
Thomas O'Connor,	Jessup,	Lackawanna.
John J. Mullen,	Minooka,	Lackawanna.
W. R. Manners,	Moosic,	Lackawanna.
J. W. Knedler,	Moscow,	Lackawanna.
F. R. Coyne,	Old Forge,	Lackawanna.
T. F. O'Connor,	Olyphant,	Lackawanna.
W. S. Bloes,	Peckville,	Lackawanna.
Chittenden Pharmacy,*	Scranton,	Lackawanna.
Howard E. Griffin,	Scranton,	Lackawanna.
H. S. Jenkins,	Scranton,	Lackawanna.
Carl Koempel,	Scranton,	Lackawanna.
P. F. Lally,	Scranton,	Lackawanna.
Joseph Davis,	Taylor,	Lackawanna.
E. J. Murray,	Throop,	Lackawanna.
C. S. Frey,	Christiana,	Lancaster.
W. L. Bucher,	Columbia,	Lancaster.
Charles E. Dierolf,	Elizabethtown,	Lancaster.
G. S. Royer,	Ephrata,	Lancaster.
J. A. Miller,*	Lancaster,	Lancaster.
L. W. Moyer,	Lititz,	Lancaster.
H. F. Ruhl,	Manheim,	Lancaster.
Libhart Drug Company,	Marietta,	Lancaster.
E. E. Lenhardt,	Millersville,	Lancaster.
Elmer W. Garber,	Mount Joy,	Lancaster.
J. G. Weaver,	Strasburg,	Lancaster.
Quarryville Drug Company,	Quarryville,	Lancaster.
Arthur Cohen,	Ellwood City,	Lawrence.
H. McGoun,	New Bedford,	Lawrence.
McKinley & Frantz,*	New Castle,	Lawrence.
T. H. Jewell,	New Wilmington,	Lawrence.
F. B. Moorhead,	Volant,	Lawrence.
David McDonald,	Wampum,	Lawrence.
W. S. Seabold,	Annville,	Lebanon.
Charles T. Behney,	Fredericksburg,	Lebanon.
T. M. Bross,	Jonestown,	Lebanon.
Charles E. Boger,*	Lebanon,	Lebanon.
William C. Kline,	Myerstown,	Lebanon.
C. E. Bundle,	Palmyra,	Lebanon.
Mrs. S. K. Barndt,	Alburtis,	Lehigh.
Keiper Drug Company,*	Allentown,	Lehigh.
Lawall Brothers,	Catasauqua,	Lehigh.
Horn's Drug Company,	Coplay,	Lehigh.
M. J. Backenstoe,	Emaus,	Lehigh.
H. W. Dundore,	Emaus,	Lehigh.
John J. Mohr,	Fogelsville,	Lehigh.
H. D. Gross & Son,	Schnecksville,	Lehigh.
S. B. Kern,	Slatington,	Lehigh.
W. T. Colborn,	Ashley,	Luzerne.
Remmiman & Llewellyn,	Avoca,	Luzerne.
G. A. A. Kuehn,	Dallas,	Luzerne.
E. J. Edwards,	Drifton,	Luzerne.
W. J. Mayo Estate,	Duryea,	Luzerne.
McMenamin & Ferry,	Freeland,	Luzerne.
Munnaw & Hughes,	Hazleton,	Luzerne.
W. F. Church,	Kingston,	Luzerne.
W. F. Gabrio,	Lattimer Mines,	Luzerne.
A. H. Edwards,	Maltby,	Luzerne.
R. H. Meyer,	Nanticoke,	Luzerne.
J. J. Myers,	Nescopeck,	Luzerne.
F. J. Quigley,	Parsons,	Luzerne.
J. L. Peck,	Pittston,	Luzerne.
Durbin's Pharmacy,	Plymouth,	Luzerne.
J. F. Briggs,	Shickshinny,	Luzerne.
J. A. Karchner,	Wapwallopen,	Luzerne.
J. J. Baker,	White Haven,	Luzerne.
F. J. Colley,	Wilkes-Barre,	Luzerne.
W. D. White & Company,*	Wilkes-Barre,	Luzerne.
Jacob Sutliff,	Hughesville,	Lycoming.
B. E. Staples,	Jersey Shore,	Lycoming.
John L. Miller,	Montgomery,	Lycoming.

Distributors of Diphtheria Antitoxin—Cont'd.

Distributor.	Place.	County.
C. W. Harter,	Muncy,	Lycoming.
A. Monroe Hall,	Newberry,	Lycoming.
Skelly Brothers,	Ralston,	Lycoming.
H. W. Carson,	Slate Run,	Lycoming.
L. L. Walton & Company,*	Williamsport,	Lycoming.
Thompson & Wood,	Bradford,	McKean.
John C. Mills,	Duke Center,	McKean.
T. L. Sartwell,	Eldred,	McKean.
Kane Drug Company,	Kane,	McKean.
C. J. Stahl & Company,	Mt. Jewett,	McKean.
Studholme Brothers,*	Port Allegany,	McKean.
L. K. Hogarth,	Smethport,	McKean.
J. Stewart,	Clark,	Mercer.
F. H. Soult,	Fredonia,	Mercer.
George W. Chapin,	Greenfield,	Mercer.
Harry D. West,*	Greenville,	Mercer.
C. C. Kennedy,	Grove City,	Mercer.
T. C. Jackson,	Hadley,	Mercer.
L. W. Donaldson & Company,	Jackson Center,	Mercer.
D. H. Smith,	Jackson Center,	Mercer.
R. O. Stanford,	Jamestown,	Mercer.
(Temporary vacancy),	Mercer,	Mercer.
S. S. Overmoyer,	New Lebanon,	Mercer.
T. A. Lafferty,	Sharon,	Mercer.
F. K. Reichard,	Sharpsville,	Mercer.
E. K. Martin & Son,	Sheakleyville,	Mercer.
J. P. Hines,	Stoneboro,	Mercer.
Mrs. M. H. Hyde,	West Middlesex,	Mercer.
W. H. Spangler,	Belleville,	Mifflin.
J. A. Muthersbough,*	Lewistown,	Mifflin.
William F. Roche,	McVeytown,	Mifflin.
(Temporary vacancy),	Milroy,	Mifflin.
Henry B. Shaver,	Newton Hamilton,	Mifflin.
McDonald Drug Company,	Reedsville,	Mifflin.
J. A. Stotz,	Brodheadsville,	Monroe.
J. A. Seguine,	Cresco,	Monroe.
Red Cross Pharmacy,	East Stroudsburg,	Monroe.
D. C. Trach,	Kresgeville,	Monroe.
Setward Flagler,*	Stroudsburg,	Monroe.
A. A. Wertman,	Tannersville,	Monroe.
George H. Rhoads,	Tobyhanna,	Monroe.
A. J. King,*	Ardmore,	Montgomery.
L. Stanley Kind,	Bala,	Montgomery.
Christian Moore,	Bryn Mawr,	Montgomery.
Joseph W. Culbert,	Collegeville,	Montgomery.
William Neville,	Conshohocken,	Montgomery.
James D. Craig,	Fort Washington,	Montgomery.
Walter Rothwell,	Hatboro,	Montgomery.
Harry A. McLaughlin,	Jenkintown,	Montgomery.
E. J. Kuhns,	Lansdale,	Montgomery.
Curtis Huzzard,*	Norristown,	Montgomery.
Child's Pharmacy,	North Wales,	Montgomery.
Randolph Wehler,	Pennsburg,	Montgomery.
C. S. Bentz,	Pottstown,	Montgomery.
G. W. Bailey,	Royersford,	Montgomery.
Pennepacker & Bromer,	Schwenkville,	Montgomery.
Frank Bunting,	Souderton,	Montgomery.
C. Scott Eves,*	Danville,	Montour.
E. K. Eisenhart,	Bangor,	Northampton.
S. R. Miller,	Bath,	Northampton.
H. A. Burkhart,	Bethlehem,	Northampton.
H. M. Ueberroth,	Easton,	Northampton.
Weaver's Pharmacy,*	Easton,	Northampton.
Eckert's Drug Store,	Hellerown,	Northampton.
Nelson L. Yeakel & Company,	Nazareth,	Northampton.
W. B. Gross,	Pen Argyl,	Northampton.
(Temporary vacancy),	Siegfried,	Northampton.
Metzger & Young,	South Bethlehem,	Northampton.
J. S. Krebs,	Herndon,	Northumberland.
Samuel Hollister,	Locust Gap,	Northumberland.
E. L. Keiser,	Milton,	Northumberland.

Distributors of Diphtheria Antitoxin—Cont'd.

Distributor.	Place.	County.
Standard Drug Store,	Mt. Carmel,	Northumberland.
Zimmerman Drug Store,	Mt. Carmel,	Northumberland.
S. M. G. Wenck & Son,	Northumberland,	Northumberland.
T. R. Clarkson & Company,	Shamokin,	Northumberland.
William K. Armstrong,*	Sunbury,	Northumberland.
J. S. Mengel,	Trevorton,	Northumberland.
F. Lyons,	Turbotville,	Northumberland.
John B. Dunn,	Watsontown,	Northumberland.
D. P. Stokes,	Blain,	Perry.
E. C. Smith,	Duncannon,	Perry.
Silas A. Rice,	Ickesburg,	Perry.
S. M. Shuler & Sons,	Liverpool,	Perry.
B. F. Kell,	Loysville,	Perry.
E. W. Snyder,	Marysville,	Perry.
D. A. Lahr,	Millerstown,	Perry.
A. R. Johnston,*	New Bloomfield,	Perry.
J. A. Rhea,	New Germantown,	Perry.
J. S. Eby,	Newport,	Perry.
Thomas H. Gilpin,	Greentown,	Pike.
W. R. Shannon,	Lackawaxen,	Pike.
A. W. Balch,	Matamoras,	Pike.
C. O. Armstrong,*	Milford,	Pike.
John T. Sinon,	Austin,	Potter.
McGee & Miller,	Costello,	Potter.
Smith & Wood,*	Coudersport,	Potter.
R. L. Emerick,	Cross Fork,	Potter.
A. Lehman,*	Galeton,	Potter.
G. F. Chapman,	Genesee,	Potter.
Charles Meine,	Germania,	Potter.
W. E. Gilbert,	Harrison Valley,	Potter.
A. B. Payne,	Oswayo,	Potter.
F. H. Hoose,	Roulette,	Potter.
G. W. Lyon,	Shinglehouse,	Potter.
H. K. Lane,	Ulysses,	Potter.
R. J. Williams,	Ashland,	Schuylkill.
Frank L. Brown,	Auburn,	Schuylkill.
W. D. Davis,	Coaldale,	Schuylkill.
W. D. McLaren,	Cressona,	Schuylkill.
J. A. Depew,	Delano,	Schuylkill.
William P. Holt,	Frackville,	Schuylkill.
W. J. Monaghan,	Girardville,	Schuylkill.
G. G. Hubler,	Gordon,	Schuylkill.
John McBride,	McAdoo,	Schuylkill.
H. J. Krebs,	Mahanoy City,	Schuylkill.
F. W. Simmons,	Minersville,	Schuylkill.
E. J. Campbell,	New Philadelphia, Silver Creek P. O.	Schuylkill.
W. A. Yost,	New Ringgold,	Schuylkill.
John Sutton,	Pine Grove,	Schuylkill.
R. F. Jones,	Port Carbon,	Schuylkill.
W. S. Cowen,*	Pottsville,	Schuylkill.
Harry J. Gwinner,	St. Clair,	Schuylkill.
G. I. Bensinger,	Schuylkill Haven,	Schuylkill.
Wasley's Pharmacy,	Shenandoah,	Schuylkill.
Louis Piz,	Sheppton,	Schuylkill.
J. T. Bond Estate,	Tamaqua,	Schuylkill.
W. A. Hawk,	Tower City,	Schuylkill.
J. H. Schultz Pharmacy,	Tremont,	Schuylkill.
R. R. Updegrave,	Valley View,	Schuylkill.
J. O. Wagner,	Beaver Springs,	Snyder.
E. M. Miller,	Beavertown,	Snyder.
W. H. Spangler,	Belleville,	Snyder.
Jerry Charles,	Freeburg,	Snyder.
Calvin Ulsh,	McClure,	Snyder.
George D. Wagenseller,	Selinsgrove,	Snyder.
Ben Smith,*	Swineford,	Snyder.
J. J. Brallier,	Berlin,	Somerset.
C. R. Sprowls,	Boswell,	Somerset.
Equitable Supply Company,	Cairnbrook,	Somerset.
H. P. Meyers,	Confluence,	Somerset.
D. W. Livengood,	Elk Lick,	Somerset.
R. T. Pollard,	Garrett,	Somerset.
Henry A. Zimmerman,	Holsopple,	Somerset.

Distributors of Diphtheria Antitoxin—Cont'd.

Distributor.	Place.	County.
Charles R. Bittner,	Hooversville,	Somerset.
F. B. Thomas,	Meyersdale,	Somerset.
Cyrus B. Moore,	New Lexington,	Somerset.
I. D. Heckler,	Rockwood,	Somerset.
R. P. Brant,	Shanksville,	Somerset.
T. J. Jacobs,	Somerfield,	Somerset.
J. S. Picking,*	Somerset,	Somerset.
W. H. H. Schrock,	Stoyestown,	Somerset.
C. E. Householder,	Windber,	Somerset.
Charles W. Hoffa,	Dushore,	Sullivan.
M. A. Roger's Sons,	Forksville,	Sullivan.
A. H. Buschhausen,*	Laporte,	Sullivan.
Lopez Drug Company,	Lopez,	Sullivan.
H. K. Davis,	Sonestown,	Sullivan.
Davis & Allen,	Forest City,	Susquehanna.
W. D. Cox,	Hallstead,	Susquehanna.
A. D. Barnes,	Herrick Center,	Susquehanna.
A. J. Taylor,	Hopbottom,	Susquehanna.
F. D. Morris,*	Montrose,	Susquehanna.
M. A. Blair,	New Milford,	Susquehanna.
H. B. Lathrop,	Springfield,	Susquehanna.
C. R. Carrington,	Susquehanna,	Susquehanna.
E. Bowen,	Blossburg,	Tioga.
T. A. Fessler,	Elkland,	Tioga.
F. L. Gilibert,	Knoxville,	Tioga.
Darling's Pharmacy,	Lawrenceville,	Tioga.
Fred B. Miller,	Liberty,	Tioga.
John P. Bates,	Mansfield,	Tioga.
Frank Smith,	Millerton,	Tioga.
Mrs. J. E. Wells,	Tioga,	Tioga.
H. L. Blatchely,*	Wellsboro,	Tioga.
Frank B. Holcomb,	Westfield,	Tioga.
Anthony Armstrong,	Allenwood,	Union.
O. W. H. Glover,	Laurelton,	Union.
T. D. Baker,	Lewisburg,	Union.
J. C. Steans Estate,	Mifflinburg,	Union.
Gosser Drug Company,	Emlenton,	Venango.
G. H. Curtis,*	Franklin,	Venango.
Wilson Cross Sons,	Kennerdell,	Venango.
A. W. Britton,	Oil City,	Venango.
Henry Strahl,	Petroleum Center,	Venango.
H. C. Zeamer,	Pleasantville,	Venango.
Charles P. Snyder,	Polk,	Venango.
L. C. Curtis,	Utica,	Venango.
B. E. Norton,	Kinzua,	Warren.
Simpson Brothers,	North Clarendon,	Warren.
Van Orsdale & Wiltsie,	Russell,	Warren.
Milton Dunn,	Sheffield,	Warren.
C. Kemble & Son,	Tidioute,	Warren.
William S. Peirce,*	Warren,	Warren.
R. L. Mead,	Youngsville,	Warren.
S. F. Caldwell,	Bentleyville,	Washington.
W. E. McCurdy,	Burgettstown,	Washington.
Piper's Drug Store,	California,	Washington.
H. M. Thompson,	Canonsburg,	Washington.
Piper Brothers,	Charleroi,	Washington.
J. C. MacCartney,	Claysville,	Washington.
Piper Pharmacy,	Donora,	Washington.
Charles Retzer,	Hickory,	Washington.
Robin's Pharmacy,	McDonald,	Washington.
J. D. Griffity,	Millsboro,	Washington.
R. E. & R. W. Byers,	Monongahela,	Washington.
Valentine Brothers,*	Washington,	Washington.
O. J. Mullen,	Hamlin,	Wayne.
J. S. Welsh,	Hawley,	Wayne.
Jadwin Pharmacy,*	Honesdale,	Wayne.
J. E. Tiffany,	Pleasant Mount,	Wayne.
C. M. Pethick,	Tyler Hill,	Wayne.
J. E. Stuart,	Waymart,	Wayne.

Distributors of Diphtheria Antitoxin—Cont'd.

Distributor.	Place.	County.
C. E. Wehn,	Bolivar,	Westmoreland.
Mear's Store Company,	Claridge,	Westmoreland.
W. J. Zimmerman,	Delmont,	Westmoreland.
J. W. Freeman,	Derry,	Westmoreland.
H. D. Diffenderfer,	Export,	Westmoreland.
W. K. Ehrenfeld,*	Greensburg,	Westmoreland.
George W. Fink,	Irwin,	Westmoreland.
Horace L. Smith,	Jeannette,	Westmoreland.
Ralph Anderson,	Latrobe,	Westmoreland.
R. A. Wilt,	Ligonier,	Westmoreland.
Homer V. Naley,	Manor,	Westmoreland.
W. P. Kirk,	Monessen,	Westmoreland.
C. F. Coldsmith,	Mt. Pleasant,	Westmoreland.
J. G. Cook,	New Alexandria,	Westmoreland.
Russell St. Clair,	New Florence,	Westmoreland.
D. E. Beegle,	New Kensington,	Westmoreland.
Broadway Drug Company,	Scottdale,	Westmoreland.
Charles E. Fox,	Vandergrift,	Westmoreland.
H. A. Obley,	West Newton,	Westmoreland.
Charles Besteder,	Center Moreland,	Wyoming.
A. B. Fitch,	Factoryville,	Wyoming.
Harry M. Capwell,	Meshoppen,	Wyoming.
D. C. Vosburg & Brother,	Mill City,	Wyoming.
Mrs. Bertha E. Reynolds,	Nicholson,	Wyoming.
Samuel J. Harman,	Noxen,	Wyoming.
H. Sickler,*	Tunkhannock,	Wyoming.
G. A. Meyers,	Dallastown,	York.
T. D. Stewart,	Delta,	York.
Milton W. Britcher,	Dillsburg,	York.
N. G. Wallace,	Dover,	York.
N. Allen Overmiller,	East Prospect,	York.
J. E. Seitz,	Glen Rock,	York.
C. W. Kunkel,	Goldsboro,	York.
Emlet & Emlet,	Hanover,	York.
John W. Gable,	Hellam,	York.
S. R. Flury,	Manchester,	York.
Paul N. Hartenstein,	New Freedom,	York.
C. W. Moody,	Red Lion,	York.
Martin Hoke,	Spring Grove,	York.
Harry Mull,	Stewartstown,	York.
Annie L. Hetrick,	Wellsville,	York.
J. Illgas,	Windsor,	York.
W. P. Dougherty,	Wrightsville,	York.
Heiges & Hildebrand,*	York,	York.
A. Homer Stacks,	York,	York.
I. M. Anspach,	York Haven,	York.

DIVISION OF SANITARY ENGINEERING.

Chief Engineer:—Charles A. Emerson, Jr. (Acting),
Philadelphia.

Assistant Engineer in Charge of General Office Work:—C. Howe Cummings, Philadelphia.

First Assistant Engineer on Waterworks and Sewerage:—Paul Hooker, Harrisburg, Dauphin County.

Assistant Engineer on Waterworks and Sewerage:—William H. Ennis, Philadelphia.

Assistant Engineer on Tests of Water and Sewage Treatment Plants:—Ralph E. Irwin, Meadville, Crawford County.

Assistant Engineers:—†Henry P. Drake, Pittsburgh, Allegheny County.
Lawrence M. Fisher, Berne, Berks County.
*Charles R. Forbes, Quarryville, Lancaster County.
J. Warren Fortenbaugh, Harrisburg, Dauphin County.

Ivan M. Glace, Harrisburg, Dauphin County.
John M. Mahon, Jr., Harrisburg, Dauphin County.
Coleman B. Mark, Lebanon, Lebanon County.
Howard E. Moses, Harrisburg, Dauphin County.
Samuel R. Parke, Jr., Philadelphia.
William C. Riddle, Lancaster, Lancaster County.
Moylan E. Shaughnessy, Lewisburg, Union County.
Christian L. Siebert, Pittsburgh, Allegheny County.
Albert J. Smalshaf, Pottstown, Montgomery County.
†Howard R. Stocker, Reading, Berks County.
Roland B. Styer, Lancaster, Lancaster County.
Joseph A. Tinsman, Philadelphia.
†Theodore L. Welles, Jr., Kingston, Luzerne County.
Luther E. Wickersham, Harrisburg, Dauphin County.
Ira F. Zeigler, Carlisle, Cumberland County.

Chief Field Inspector:—Moses K. Ely, Doylestown, Bucks County.

Chief Clerk in Charge of Petitions and Complaints:—Daniel V. Ness, Manchester, York County.

Chief Clerk:—Ray E. Steward, Harrisburg, Dauphin County.

Clerks:—Harry C. Beckley, Catawissa, Columbia County.
Andrew J. Bohl, Harrisburg, Dauphin County.
*Richard F. Einstein, Harrisburg, Dauphin County.
Howard M. Haines, Harrisburg, Dauphin County.
John K. Miller, Harrisburg, Dauphin County.
Mrs. Nellie S. Pretty, Chester, Delaware County.
Miss Edith Rourke, Harrisburg, Dauphin County.
Mrs. Lila H. Trace, Harrisburg, Dauphin County.

Stenographers:—Miss M. Louise Eckels, Carlisle, Cumberland County.
Miss Helen S. Ettinger, Carlisle, Cumberland County.
Miss Elizabeth R. Fleisher, Newport, Perry County.
Miss Leola Hannah, Meadville, Crawford County.
Miss Bula L. Koons, Penbrook, Dauphin County.
Miss Clara V. Mahaney, Harrisburg, Dauphin County.
Miss Anna E. Moore, Harrisburg, Dauphin County.
Miss Nelle J. Shrum, Harrisburg, Dauphin County.
Miss Margaret Small, York, York County.
Miss Frances Smith, Harrisburg, Dauphin County.
Mrs. Nellie K. Sourbeer, Harrisburg, Dauphin County.

Draftsmen:—John W. German, Jr., Harrisburg, Dauphin County.
G. Douglas Andrews, Harrisburg, Dauphin County.
Chester A. Eckbert, Curwensville, Clearfield County.
*F. Marion Sourbeer, Jr., Harrisburg, Dauphin County.
George E. Williams, Harrisburg, Dauphin County.

Inspectors in Charge of Corps of Sanitary Inspectors:—
James M. Clark, New Castle, Lawrence County.
William K. Claypoole, Philadelphia.
Harry A. Miller, Lebanon, Lebanon County.
John B. Nightingale, Doylestown, Bucks County.
John H. Silliman, Tamaqua, Schuylkill County.
Roy M. Souder, Lancaster, Lancaster County.
William R. Teats, Burnham, Mifflin County.
*J. Creighton Yeager, Lewistown, Mifflin County.

Sanitary Inspectors:—

Henry Andrews, Ardmore, Montgomery County.
James B. Aurand, Lewistown, Mifflin County.
Charles L. Baucher, Wilkes-Barre, Luzerne County.
†*C. L. Berkmeyer, Slatington, Lehigh County.
†Jas. S. Biddle, Philadelphia.
†J. N. Brosius, Middleburg, Snyder County.
*Berkey H. Boyd, Scottdale, Westmoreland County.
C. W. Collins, Beaver, Beaver County.
E. I. Confer, Millmont, Union County.
A. W. Conrad, Nicholson, Wyoming County.
J. S. Couch, Oil City, Venango County.
*Wm. Davis, Pittsburgh.
Wm. Ellis, Phoenixville, Chester County.
S. B. Engle, Philadelphia.
E. H. Evans, Philadelphia.
E. A. Falter, Harrisburg, Dauphin County.
‡M. Z. Frederick, West Telford, Montgomery County.
†Wm. Goodman, Philadelphia.
†John C. Groome, Carlisle, Cumberland County.
L. S. Haldeman, Marietta, Lancaster County.
R. S. Hansbury, Philadelphia.
J. M. Hellings, Philadelphia.
Edward L. Hill, New Milford, Susquehanna County.
†Jacob Holtzman, West Philadelphia.
Toner A. Hugg, Milesburg, Centre County.
†H. T. Hunsicker, Lansdale, Montgomery County.
L. S. Imler, Imler, Bedford County.
D. M. Irwin, Greensburg, Westmoreland County.
Charles P. Jarrett, Norristown, Montgomery County.
†Chas. J. Kinsler, Dallastown, York County.
C. R. Krall, Harrisburg, Dauphin County.
Frank H. Lanard, Philadelphia.
Fred C. Lidle, Philadelphia.
Samuel S. Long, York, York County.
D. J. Marshall, New Castle, Lawrence County.
J. A. McCleary, Altoona, Blair County.
†L. S. McLaughlin, Beaver Falls, Beaver County.
†*Thomas Moore, Philadelphia.
*W. H. Morris, Duncannon, Perry County.
T. P. Nicholson, North Wales, Montgomery County.
O. F. Nickel, Johnstown, Cambria County.
Lester L. Pierce, Towanda, Bradford County.
*W. E. Rice, Duncannon, Perry County.
*J. W. Roebuck, Philadelphia.
Augustus C. Schrink, Pottsville, Schuylkill County.
†H. T. Shadduck, Brooklyn, Susquehanna County.
†John Sheehan, Erie, Erie County.
†Wm. Shonleber, Philadelphia.
†Arthur D. Smith, Kaolin, Chester County.
J. H. Stewart, Lansdowne, Delaware County.
*Louis Stevens, Philadelphia.
†J. E. Sullivan, Philadelphia.
†George S. Trafford, Newmanstown, Lebanon County.

Wm. H. Varnick, Philadelphia.
Royden R. Waddy, Philadelphia.
Wm. I. Waugaman, Sykesville, Jefferson County.
†Walter C. Welliver, Bloomsburg, Columbia County.
Timothy Whelan, Clifton Heights, Delaware County.
*H. W. Whitman, Titusville, Crawford County.
Charles E. Wirt, Sunbury, Northumberland County.
Daniel Zellers, Lebanon, Lebanon County.

Deputy Field Officers.

(So called because, while in the employ of a private corporation, they are deputized to represent the Commissioner of Health in inspecting the sanitary conditions of properties and reporting results to him.)

H. N. Blunt, Palmerton, Carbon County.
William G. Edmunds, Nanticoke, Luzerne County.
Howard Seabold, Catasauqua, Lehigh County.
E M. Stack, Scranton, Lackawanna County.
John Brown, Scranton, Lackawanna County.
David Decker, Ridgway, Elk County.
Scott Bailey, DuBois, Clearfield County.
F. D. Eagle, Butler, Butler County.
D M. Watt, Butler, Butler County.
John Coslett, Scranton, Lackawanna County.

*Resigned. †Appointed. ‡Deceased.

DIVISION OF ACCOUNTING AND PURCHASING.

Chief of Division:—E. I. Simpson,
Philadelphia.

Bookkeepers:—Clinton T. Williams, Wellsboro, Tioga County.
Miss Berthan W. Knoke, Philadelphia.
Miss Lillian McCarty, Muncy, Lycoming County.
Miss Margaret C. Maher, Philadelphia.

Stenographers:—Miss Edith DeNegre, Lansdowne, Delaware County.
Miss Pauline C. Simon, Philadelphia.
Miss Lulu F. Prescott, Matamoras, Pike County.
Mrs. Adele M. Henderson, Philadelphia.
*Miss Emily T. Wilson, Philadelphia.
Miss Helen B. Irwin, Harrisburg, Dauphin County.
Miss Edna E. Hockstein, Philadelphia.
†E. Roebuck, Philadelphia.
†Katherine Brennan, Philadelphia.
†Isabel S. Magowan, Philadelphia.
†Amy S. Weil, Philadelphia.

Clerks:—Mrs. Elizabeth R. Norton, Philadelphia.
Miss Susan A. Pike, Philadelphia.
Miss Margaret J. Hackett, Philadelphia.
Miss Florence B. Tome, Lansdowne, Delaware County.
Miss Agnes L. Devlin, Philadelphia.
Miss Cecelia M. Cottingham, Philadelphia.
Miss Elizabeth G. Haines, Philadelphia.
Miss May B. Taylor, Lansdowne, Delaware County.

*Resigned. †Temporary appointments.

Miss Florence K. Sheetz, Philadelphia.
Miss Maude E. Uhler, Philadelphia.
Miss Adele M. Steer, Philadelphia.
Miss Adelaide Titus, Holmesburg, Philadelphia.
Miss Mary McIntosh, Philadelphia.
Miss Emma L. Bannan, Harrisburg, Dauphin County.
Miss Belle McClain, Philadelphia.
Miss Alice W. Mather, Philadelphia.
Miss Mary J. Whelen, Philadelphia.
Charles H. Clappier, Jr., Philadelphia.
Earl Hackman, Philadelphia.
Harry Hackman, Philadelphia.

DIVISION OF SUPPLIES.

Superintendent:—Chas. Hartzell,
Philadelphia.

Stenographer:—Miss C. L. Blanning, Williamstown, Dauphin County.
Clerks:—Miss S. J. Riegel, Steelton, Dauphin County.
Miss E. C. Mailey, Harrisburg, Dauphin County.
Leslie D. Seiders, Pottsville, Schuylkill County.

Besides the powers and duties of the Department of Health as defined in the Act of April 27, 1905, creating it, this act provides that the Commissioner of Health shall succeed to the powers and duties of the old State Board of Health.

Section 5 of the Act of June 3, 1885, is here pertinent and provides:

"It (State Board of Health) shall make sanitary investigations and inquiries respecting the causes of diseases and especially of epidemic diseases, including those of domestic animals, the sources, mortality and the effects of localities, employments, conditions, habits, food, beverages and medicines on the health of the public. It shall also disseminate information upon these and similar subjects among the people. It shall, when required by the Governor or Legislature, and at such other times as it deems important, institute sanitary inspections of public institutions or places throughout the State. It shall codify and suggest amendments to the sanitary laws of the Commonwealth, and shall have power to enforce such regulations as will tend to limit the progress of epidemic diseases."

MEETING OF THE ADVISORY BOARD.

On the fourteenth of January, members of the Advisory Board gathered in Harrisburg in response to my call that I might present such matters relating to the work of the Department and the sanitary welfare of the State as seemed to require consideration by that Board.

As the result of our discussion, supplemented by the written assent of the absent members, there were adopted by the Board, spread upon the minutes, and later published as the law directs, the following:

"RULES AND REGULATIONS.

"First. No person, or persons, firm, corporation or common carrier, operating or conducting any hotel, restaurant, dining car or other public eating place in this Commonwealth, shall hereafter employ or keep in their employ any person or persons in the capacity of cook, waiter, chambermaid, kitchen help or other house servants who are suffering from or who are carriers of any communicable disease, and all persons so employed, who at the time of the adoption and promulgation of this Regulation are suffering from or are carriers of any communicable disease, must be excluded at once from such employment in any hotel, restaurant, dining car or other public eating place, provided that if any person or persons, firm, corporation or common carrier shall institute and maintain a medical inspection for their cooks, waiters, chambermaids, kitchen help and other house servants at intervals of at least twice a year for the purpose of excluding from such employment persons suffering from or carriers of communicable disease, and shall thereupon promptly exclude from such employment any person or persons found to be suffering from or carriers of a communicable disease, they shall be considered as complying with the provisions of this Regulation unless in the interim between such inspections the diseased condition is manifest or unless notice of the diseased condition has been served in writing upon the management of such hotel, restaurant, dining car or other public eating place by a physician or by the health authorities.

"Second. No person, firm or corporation shall expose for sale on any sidewalk or pavement or other exposed place any fruit, vegetables or other articles of food which are eaten uncooked unless such fruit, vegetables or other articles of food are thoroughly screened and protected from flies and unless they are on elevated stands at least twenty-four inches above the level of the sidewalk or pavement.

"Third. Every physcian practicing in any portion of this Commonwealth, who shall treat or examine any persons suffering from, or afflicted with, paratyphoid fever, anthracosis, arsenic poisoning, brass poisoning, carbon monoxide poisoning, lead poisoning, mercury poisoning, natural gas poisoning, phosphorous poisoning, wood alcohol poisoning, naptha poisoning, bisulphide of carbon poisoning, dinitrobenzine poisoning, caisson disease (compressed air illness), shall, if said case shall be located in a township of the first class, a borough, or a city, forthwith make a report in writing to the health authorities of said township, city or borough; and, if said case shall be located in a township of the second class, or a city, borough, or township of the first class not having a board of health or body acting as such, to the State Department of Health."

Among the laws passed by the General Assembly in its last session and approved by the Governor, was one for the protection of public health by providing that in the conduct of hotels and other public eating places no person may be employed as cook or other house servant who suffers from any one of certain diseases or is a "carrier" of typhoid fever. This Act of Assembly prescribes also the proper cleansing of dishes or receptacles used in eating or drinking, and prohibits the use of common towels and common drinking vessels in places of this character. Provision is also made for at least a semi-annual inspection of all house servants coming under this law, but

no definite determination is made of the public agencies through which these protective measures shall be carried out or supervised. The law was approved at the end of May. After a comprehensive study of the conditions to be met throughout Pennsylvania, it became apparent that in addition to the detail work in the rural districts the general oversight of the operation of the act in all parts of the State would fall upon the Department, however active the boards of health of boroughs or cities might be within their corporate limits.

A letter of notification to the boards of health of all municipalities in the State was sent out under date of September 2nd. This contained a copy of the act and called attention to the duty of the board of health thereunder. It suggested investigations at irregular intervals, perhaps once a month, by municipal sanitary inspectors, of all eating places; the notification of delinquent managements to make the necessary changes; and the following of this with legal proceedings as provided for under the act where necessary to enforce compliance. It was also suggested that medical inspection of employes by managements, as provided for under the act, be encouraged by the boards of health and they were requested to furnish the Department with copies of such reports from hotels, or other public eating places. Additional copies of the act were offered, if desired.

The Division of Public Service was established the first of November to deal with problems arising from the operation of the "Public Eating Place Act" (1915 P. L. 612). A chief of the Division was appointed, but during the formative period of November and December this work was done within the general division of the Department.

The epidemic history of the year 1915 in Pennsylvania is not marked by any great outbreaks of communicable disease; but certain limited epidemics are deserving mention here, and the special reports of their investigation by officers of the Division of Medical Inspection and the Division of Sanitary Engineering, as they appear in that portion of this volume specially set apart, are worthy of perusal and present some interesting and suggestive facts—specially the series of water-borne typhoid epidemics in towns of the Allegheny watershed. The Danville and Shippensburg typhoid reports are also interesting. The whole group serves to emphasize the importance of the treatment of sewage as well as water supplies, if these epidemics are to be reduced in frequency and severity within limits easily attainable—a contention which I have made for years.

An epidemic of diphtheria in the Oak Run school district and an outbreak of scarlet fever at Gettysburg College are also reported in detail.

Poliomyelitis in 1915 was chiefly confined to the northwestern part of the State, in Erie and adjacent counties, and 162 cases were reported as against 113 cases in 1914. An epidemic of 101 cases occurred in the city of Erie during August, September and October, and I sent Dr. Herbert Fox and Dr. Damaso Rivas, of the University of Pennsylvania, to study the epidemic and afford any assistance possible to the local health authorities. Their report, printed among the special reports in this volume, covers house and neighborhood surveys, geological, meterological, clinical and laboratory researches and is an extensive epidemiologic study.

In April a new classification scheme for patients discharged from the Sanatoria and Dispensaries was adopted, superseding all former classifications. This scheme classifies patients as *Cured, Apparently Cured, Arrested, Apparently Arrested, Improved, Unimproved and Died.* Thereafter all patients discharged from the Dispensaries or Sanatoria were so recorded upon the Department's records.

A change in the handling of upfollow statistics of tuberculosis was also inaugurated. Hitherto these statistics had been finally revised and tabulated under the direct supervision of the Sanatorium from which the individual patients had been discharged. As the Sanatoria became more numerous it was found that this plan led to confusion which it seemed impossible to avoid. I accordingly decided to place the supervision of this work in the charge of the Medical Inspector of Dispensaries in order that the final editing and tabulation of the reports made by the Dispensary Nurses might be made in his office. This means that we have now one general upfollow for those who have been treated in any of the Sanatoria and another general upfollow for those who have been treated in any of our Dispensaries without going to any one of our Sanatoria—so far as our nurses have been able to trace such patients.

The nursing staffs which the Department is able to maintain for service in connection with the work in the Dispensaries are limited, so that the work which they are able to do in the upfollow of former patients of the Sanatoria and Dispensaries is hampered and the data are not complete.

Upon November 22, 1915, the Commissioner of Health was summoned into Court at Media in the case of The Metropolitan Life Insurance Company against the heirs of a person formerly a patient at the State Sanatorium at Mont Alto. The Court decided that the Commissioner could not be compelled to bring into court records regarding persons who have been treated in the State Dispensaries or Sanatoria.

On April second notification by mail was made to the physicians of the State, advising them that the Department was prepared to

perform complement fixation tests for syphilis and giving directions for the securing of test outfits (Outfit No. 5). It is confidently expected that the important aid to diagnosis thus made available will prove valuable to many physicians.

The Bureau of Housing was established in February. The appropriations made for this work as well as that for the inspection of schools having been seriously pruned below the Department's estimate of the needs, there must necessarily result a curtailment of the work undertaken unless a deficiency is found justifiable. Before this and even before the Act of 1913 authorizing the establishing of a Bureau of Housing, many housing reforms in connection with the Department's tuberculosis work were undertaken, although there was no appropriation therefor and the work was necessarily limited.

PAN-AMERICAN EXPOSITION.

During the year, I sent the following named members of the Department staff: Dr. B. F. Royer, Dr. J. J. Mullowney, Mr. E. I. Simpson and Miss Alice O'Halloran, to San Francisco, California, in connection with the exhibition of the Pennsylvania Health Department at the Pan-American Exposition.

They were variously engaged in demonstration, lectures, talks and explanations of the scope and work of our Department—particularly in the matter of our dispensary and sanatorium care of tuberculous citizens—and in the care and shipment to and from the Pacific Coast of our valuable exhibit, now housed in part of the Academy of Natural Sciences of Philadelphia as a permanent exhibit.

A complete description of the undertaking and the exhibit, illustrated with photographs of the more important models, is published as Health Bulletin No. 77.

Preparations for an exhibit by the Department of Health in the Panama-Pacific International Exposition at San Francisco could not be undertaken until the autumn of 1914 was well advanced. On the twentieth of October the Pennsylvania Commission voted to set aside a sum of money, not to exceed $20,000, for this purpose. This amount was small as compared with the appropriations of some other States conspicuous in the promotion of the public health, being in fact less than a quarter of that of an adjoining State, and the time for preparation was short. By strenuous effort, the development of the various parts of the exhibit was begun and carried on. Numerous

models, diagrams and photographs had to be made, and many charts were needed to illustrate such phases of departmental activity as seemed suited to a public display. For this purpose the necessary workrooms were established at the corner of Nineteenth and Arch Streets, in Philadelphia. Early in April it became possible to send forward our well-boxed material, and on the twenty-first the shipment reached San Francisco. The exhibit was then installed as rapidly as possible, some two months after the nominal opening of the exposition, but quite as soon as that of many of our neighbors.

The exhibit of the Department of Health at the Panama-Pacific Exposition was housed in the magnificent Palace of Education. No building at the Exposition contained more in the way of instruction and inspiraton to men and women who are interested in the real welfare of the human race and the betterment of mankind, than this superb creation of the builder's art. No part of this wonderful building lent its appeal more strongly to these same thousands of men and women—the people who think—than the excellently complete exhibit of the Department of Health of the Commonwealth of Pennsylvania.

Those who saw it invaribly exclaimed "Pennsylvania is showing the way in sanitation, in school hygiene, in welfare work, to all the states, and to the nations." "How do you do it?" "How do you get the money to do all this grand work?" They stared with wide-open eyes when they learned that all this has been accomplished practically in a decade, that all is due to the tireles energy, the tactful persuasion, and the wise forethought which the Governors and State legislatures have shown, sometimes in the face of no mean opposition, in advocating the view that Pennsylvania could make no better investment of its money than to invest it in those things which make for the health and welfare of the citizens of the State. For some time past Pennsylvania has been "The Keystone of Vital Statistics." It is today the "Keystone of Sanitary Work" in the United States.

One could not enter the Palace of Education without being drawn instinctively to the immense booth on all sides of which hung spotless white pennants with large, green keystones, while from the centre beam and at each end were draped—side by side—the Stars and Stripes and the beautiful blue silk flag of the Commonwealth of William Penn.

Almost the first thing to arrest the eye of the visitor was the great white banner on which was inscribed the striking truth: "The varied industries on which we depend for our comfort, the wealth which enables us to enjoy them, and the arts of civilization which adorn and diversify our lives are but the fruitage of the tree whose root is health."

The exhibit graphically and vividly portrayed many details of the activities of the Department. It may be roughly divided into three

separate parts—School Hygiene, Typhoid Fever and Sanitary Engineering, and the Tuberculosis Work.

It took hours for the vistor to inspect the exhibit even in a cursory fashion, and it would take a large volume to describe in any just detail the great number of models, photographs, transparencies and reproductions, so beautifully arranged as to convey the truths they represented in the most impressive manner.

The excellence of the display can be no better expressed than by saying that the Commissioners of the Exposition awarded to the Exhibit of the Pennsylvania Department of Health the Grand Prize, the highest honor within their gift; and bestowed upon Pennsylvania's Commissioner of Health (Dr. Samuel G. Dixon) the Gold Medal, representing the most distinguished honor which could be conferred by the Exposition Managers upon an individual.

ADDRESSES, CONFERENCES, CONVENTIONS, ETC.

Throughout the year 1915, as in past years, many requests were received from associations and societies in Pennsylvania and elsewhere for papers for presentation at meetings and for attendance of the Commissioner or his representation by officials of the Department. So far as the demands of the public service would permit, these calls were answered; but the Department's exhibit at San Francisco and the necessary absence from the State of several of the Department staff prevented the acceptance of a number of invitations. The compliment of these invitations, however, was fully appreciated.

The more important conventions were attended by one or more representatives, and frequently an active part was taken in the discussion of questions of public health arising at these conferences. Meetings outside of the State embraced conventions at San Francisco, Seattle, Washington, D. C., Rochester, N. Y., Chicago and Atlantic City, N. J., and included the Annual Conference of the Secretaries of State and Provincial Boards of Health of North America and the American Public Health Association.

During the year, I attended the Pan-American Medical Conference at San Francisco, and prepared a paper on "The Sanitary Engineer in Public Health Work" for the Section of Preventive Medicine and Public Health of this Conference. The paper was published as Department Bulletin No. 72. I was invited to read a paper before the Second International Conference on Race Betterment at the Panama-Pacific Exposition, but was called home by the illness of a relative. A paper on this subject was read August 4th by Dr. J. J. Mullowney, Assistant Chief Medical Inspector of the Department. By invitation

I delivered an address at Pittsburgh at the cornerstone laying for the Children's Building of the Hospital of the Tuberculosis League. This address was published as Department Bulletin No. 75.

An address was prepared for the Annual Meeting of the Pennsylvania Water Works Association, held at Atlantic City on October 21st. It was published as Bulletin No. 74.

The following papers were prepared and read by Department officers before various society meetings, as stated below:

"On the Medical Inspection of 469,000 School Children in Pennsylvania," at Eighth Annual Congress of the American School Hygiene Association at San Francisco, June 25, 1915, by Dr. B. F. Royer. (Published as Bulletin No. 71.)

"Quarantine of the Home as Practiced by the Department of Health in Pennsylvania," at the General Meeting of the Medical Society of the State of Pennsylvania, at Philadelphia, September 22, 1915, by the Commissioner of Health, and published as Bulletin No. 73, was read by Dr. Royer.

Dr. Royer also read a paper at this meeting, September 21st, upon "Morbidity and Mortality Rates from the Various Communicable Diseases of Childhood." Other addresses by Dr. Royer during the year of 1915, were made at Ursinus College, February 4th, upon "Progress in Preventive Medicine in Pennsylvania," "Preventive Medicine," March 9th, before the Dauphin County Medical Society, and a lecture upon "Housing in Relation to Health" in the Ludwick Lecture Course at the Academy of Natural Sciences of Philadelphia, January 25th. He also spoke to the Anti-Tuberculosis Society of Washington County, Maryland, on February 5th, and at the Board of Trade of Waynesboro on "Municipal Sanitation," March 16, 1915.

Dr. C. J. Hunt addressed the Lebanon County Medical Society on May 11th, upon "The Causes of Infant Mortality," and the Conference on Infant Mortality at McKeesport June 9-12, upon "The Relation of Flies to Infant Mortality," and "The Story of Ten Thousand Pennsylvania Babies."

Dr. W. R. Batt attended the Meeting of the American Public Health Association at Rochester, New York, on September tenth, representing the Department.

Dr. Karl Schäffle represented the Department at the Annual Meeting of the Pennsylvania State Homeopathic Society at Buena Vista, September sixth, and addressed the society on "The State Tuberculosis Dispensary and the Community."

Dr. Schäffle read a paper on "The Dispensary as a Bureau for the Admission of Tuberculosis Patients to Hospitals and Sanatoria" before the Eastern Conference of the National Association for the Study and Prevention of Tuberculosis at Albany, on November seventh. He also addressed the Lycoming County Teachers' Institute on "Tuberculosis in School Children."

By resolution of the General Assembly, the use of the House of Representatives was granted to Dr. Samuel G. Dixon on Monday night, March the twenty-second, 1915, between the hours of eight and nine, for the purpose of exhibiting a motion picture illustrating the Tuberculosis work of the State Department of Health. The four reels of motion pictures showing the details of Dispensary work and views and activities of the State Sanatoria at Mont Alto, Cresson and Hamburg, were exhibited before four or five hundred people, including members of the House, Senate, Departmental Heads, and the general public.

HEALTH BULLETINS.

The Pennsylvania Health Bulletin is still issued by the Department as a convenient means for the dissemination of information regarding sanitary and scientific matters, the discussion of related problems, or the presentation of summaries of special work done by the various Divisions. Each number is devoted to a single topic and has a wide circulation by virtue of a very large mailing list, in which, besides those officially interested in sanitation, are enrolled many persons who have expressed a desire to be regular readers of the Bulletin. The numbers for the past year are as follows:

No. 65, January.	Present Organization of the State Department of Health.
No. 66, February.	Notes on Typhoid Fever in Pennsylvania for the Past Nine Years.
No. 67, March.	Epidemic of Typhoid Fever in Skippackville and Vicinity.
No. 68, April.	Diphtheria and Diphtheria Antitoxin.
No. 69, May.	Flies as a Factor in Infant Mortality.
No. 70, June.	Pennsylvania Health Legislation of 1915.
No. 71, July.	On the Medical Inspection of 469,000 School Children in Pennsylvania.
No. 72, August.	The Sanitary Engineer in Public Health Work.
No. 73, September.	Quarantine of the Home as Practiced by the Department of Health in Pennsylvania.
No. 74, October.	An address before the Pennsylvania Water Works Association in its Annual Meeting at Atlantic City, October 21, 1915.
No. 75, November.	An address delivered at Pittsburgh, October 29, 1915, at the Laying of the Corner-Stone of the Children's Building of the Hospital of the Tuberculosis League.
No. 76, December.	On the Prevalence of Typhoid Fever in Philadelphia in the Autumn of 1915.

PENNSYLVANIA HEALTH LEGISLATION OF 1915.

Laws bearing upon the public health enacted during the year included the following:

1. Authorizing certain cities of the third class to extend water pipes beyond the city limits.
2. Enabling townships of the first class to provide a system of water supplies by contracting with other municipalities.
3. Amending Section 6 of the Act of June 12, 1913, by defining the powers of boards of health in boroughs and first class townships.
4. Conferring authority upon county commissioners to appropriate money for the maintenance of indigent residents who are patients in hospitals or sanatoria.
5. Authorizing boroughs to collect an annual rental from property abutting on sewers.
6. Amending the Anatomical Board Act of June 13, 1873, by certain extensions of authority of the Board and provisions for burial of bodies of certain indigents.
7. Amending the Mattress Act of May 1, 1913, by provisions as to making, renovating, sterilization, sale of and possession of mattresses.
8. Authorizing the Commissioner of Health to accept private donations for the purpose of erecting Union Chapels at Tuberculosis Sanatoria.
9. State Quarantine Law, naming duties of physicians, health officers, teachers, undertakers and others, naming reportable diseases and details of quarantine placarding, exclusion, disinfection, funerals and burials.
10. Amending the marriage license law of June 13, 1885, as amended by the Act of March 24, 1905, by providing for appointment of guardians.
11. Regulating sanitary conditions in hotels, restaurants, etc. (as elsewhere related).
12. Prohibiting the construction of mausoleums in cities of the second class.
13. Providing for the collection of expense of maintenance of inmates of hospitals and sanatoria.
14. Amending Act of May 13, 1905, relating to the registration of nurses, by transferring registration records to the office of the Commissioner of Health and defining requirements, fees and standards.
15. Relating to the indebtedness of municipalities.
16. Providing for the construction, etc., of county sewers and disposal plants.
17. Providing for the registration of births, deaths, marriages and diseases.



JOINT REPORTS OF EPIDEMICS OF TYPHOID FEVER BY THE MEDICAL DIVISION AND SANITARY ENGINEERING DIVISION.



INVESTIGATION OF TYPHOID FEVER OUTBREAK IN TOWNSHIPS OF ABINGTON AND CHELTENHAM AND THE BOROUGH OF JENKINTOWN, MONTGOMERY COUNTY.

An investigation of an epidemic of typhoid fever in the townships of Abington and Cheltenham and the borough of Jenkintown,—all in Montgomery County,—was conducted by the Department through its Divisions of Medical Inspection and Sanitary Engineering. The studies and observations were carried out in September, October and December and the Department officials and employes engaged in the inquiry were as follows:

Dr. B. F. Royer, Chief Medical Inspector; Assistant Engineer C. Howe Cummings; County Medical Inspector D. H. H. Whitcomb; Inspector in Charge W. K. Claypoole; Inspectors Henry Andrews, J. S. Biddle, E. H. Evans, R. S. Hansbury, T. Moore and J. W. Roebuck.

Dr. A. A. Cairns, Chief Medical Inspector of Philadelphia; Dr. A. N. Baggs, of Abington; Dr. M. K. Neiffer, of Wyncote; Dr. Elwood Quinn, of Jenkintown; Mr. C. H. Pike, health officer for Cheltenham Township; Mr. Ellis Williams and Mr. Thomas Williams also contributed assistance at various times and in various ways.

North of Philadelphia there is a residential suburban district along the New York Division and Bethlehem Branch of the Philadelphia and Reading Railway and the two lines of the Philadelphia Rapid Transit Company to Willow Grove. The Old York Road extends through the heart of the district from the northern city line at Oak Lane northward through Ashbourne, Elkins Park, Ogontz and Chelten Hills in Cheltenham Township, the borough of Jenkintown, and Noble, Abington and Crestmont in Abington Township, to Willow Grove in Moreland Township. West of Jenkintown, in the order named, are Wyncote, Glenside and Edge Hill, all along the boundary between Cheltenham and Abington Townships. East from Noble, along the New York Division of the Philadelphia and Reading Railway, is Meadow Brook in Abington Township. This entire district is in Montgomery County.

Water Supply.

The Moreland Spring Water Company furnishes the public supply in Wyncote, Jenkintown, Noble, Chelten Hills and the northern part of Ogontz. The supply is derived from Pennypack Creek at Valley Falls, three miles east of Jenkintown, and is filtered by gravity rapid

sand filters. An auxiliary supply is derived from drilled wells at the pumping station close to the filter plant, and there are also several small springs in the vicinity, which are used at times. The water is treated with a chemical germicide, which was increased in quantity at the time of an investigation of the filter plant and water works by officers of this Department during September, 1915, when typhoid fever was prevalent in the community.

The Springfield Consolidated Water Company furnishes the public supply in all of the parts of the district surrounding Jenkintown and Wyncote, including considerable territory in the western part of the latter. The supply is derived from Neshaminy Creek at Neshaminy Falls, ten miles east of Jenkintown, and is filtered in pressure rapid sand filters, treated with a chemical germicide and furnished to a district north of Philadelphia much more extended than the territory described in detail above. The western limit of the territory of the water company is the borough of Conshohocken, which it supplies. Here, also, the dose of chemical germicide was increased at the time of investigation of the filter plant by a Department officer in the fall of 1915. Operation reports of these water companies are filed regularly in the office of the State Department of Health and they include results of frequent bacteriological examinations. Moreover, the Department makes check inspections of the water works and bacteriological analyses from time to time.

There is no public water supply in use in a few out of the way localities, and a few residents of the district use their own supplies in preference to the public water supplies.

Sewerage.

There are semi-public sewer systems in Glenside and Jenkintown discharging into Tacony Creek, and there has been litigation against the latter system because of the nuisance created in the stream, which, below Jenkintown, passes through residential estates in Chelten Hills, Ogontz, Elkins Park and Ashbourne. Noble and Abington are drained by Pennypack Creek, as is Willow Grove.

Vegetables and Fruits.

Vegetables and fruits are distributed very largely in Jenkintown and vicinity by hucksters who obtain their stock from Philadelphia. Many homes have their own gardens and some farm products are brought in from the outlaying rural districts.

Milk Supply.

The dealers furnishing most of the milk supply in Jenkintown and vicinity are given below in order of importance, together with their addresses:

Overlook Farms, ... Willow Grove.
W. F. Taylor, ... Jenkintown.
William Haas, ... Jenkintown.
F. E. Taylor, ... Jenkintown.
Culey Brothers, ... Glenside.
Folly Farm, ... Abington.
Spahn, ... Willow Grove.
Oris Yerkes, ... Jenkintown.

Near the Philadelphia boundary line much milk is served by other dealers not covered in this investigation. The Overlook Farms dairy only is described in detail.

Overlook Farms.

The office and bottling house, the starting point for the four delivery wagons, and also the "home" dairy farm of the Overlook Farms, are located in Moreland Township, Montgomery County, on Moreland Road about a half mile south of Willow Grove. Milk was also obtained from two other farms operated by the same interests and from six independent farms. These farms, as revealed by this Department's investigation, are described below, the six independent farms first and then the three Overlook farms.

The first of the independent farms (operated by N. Duffield) is in Moreland Township, one-half mile north of Willow Grove. The dairy herd comprised ten cows. On the farm there were the farmer, his wife, son and a hired man, who quit the place the first of September, and also a boy helper. The hired man was located and interviewed. There was no history of recent sickness among the farm hands or visiting relatives. The hired man had typhoid fever about eighteen years ago, but had worked on the dairy farm for a year and a half and long been a resident of the community. The milk cans were rinsed with cold water from a dug well at the house and the milk in them was cooled in a spring house and taken to the dairy by wagon each evening during the summer to permit its being bottled and distributed the next morning. Bacteriological examinations by the Department's laboratory of samples collected September 16 from the spring and wells did not show sewage contamination at this time.

Location.	Bacteria per c. c.	B. Coli per c. c.
Spring house,	17	0
Yard pump,	40	0
Dwelling pump,	4	0

The second farm (operated by George J. Brady) is in Moreland Township about a mile north of Willow Grove. The place is somewhat dilapidated in appearance, but the farmer, who only rents the

place, appreciates the need of sanitary measures in handling the milk. The dairy herd comprised twenty-one cows. There were the farmer, his wife, a hired man and wife and two children and baby, who have been on the place for more than a year. There was no history of sickness within six years, the time of occupancy of the place by the farmer. Water from a spring house is raised by a ram and this water from a pipe was used to rinse the milk cans and the milk in them was cooled in the spring house and taken by wagon at night, during the summer, to the dairy. Bacteriological examinations made by the Department Laboratory of a sample collected from the spring house September 16 di dnot reveal the presence of sewage organisms.

Location.	Bacteria per c. c.	B. Coli per c. c.
Spring house,	1	0

The third farm (operated by Hiram Y. Brady) is in Moreland Township, about 1½ miles north of Willow Grove. There were from ten to twenty milk cows. On the farm there were the operator and brother, their father and mother and a hired man. There was no history of recent sickness. The milk cans were rinsed with cold water from a dug well between the house and the barn and the milk in the cans was cooled in a spring house and delivered by wagon to the dairy each evening in the summer and each morning in the winter. The spring house is subject to flooding at times by high water in a neighboring stream, of which the drainage area above is a little over a square mile and contains a number of farmsteads. It is reported that at such times the milk was removed from the spring house and properly cared for, and that the last such occasion of flooding was in either March or April. Bacteriological examinations made by the Department Laboratory of samples collected September 16 did not reveal the presence of sewage organisms in either the water from the spring house or the well.

Location.	Bacteria per c. c.	B. Coli per c. c.
Spring house,	18	0
Barn yard,	56	0

The fourth farm (operated by John S. Terry) is in Northampton Township, Bucks County, just north of Ivyland. There were on the place the farmer, his wife and mother and a hired man. During the summer there were eight boarders, who, however, had nothing to

do with the milk. There was no history of recent sickness among either the farm hands or the boarders. The latter were members of five different Philadelphia families, all of whom were looked up by the Philadelphia authorities under the direction of the Chief Medical Inspector, Dr. A. A. Cairns. There were seven milk cows. There were two dug wells, one in the kitchen and one nearby in a pump house where there was a gasoline engine to force water to covered tanks in the barn, where the milk was cooled, first in buckets and then in the cans. The milk was shipped each morning by train to Willow Grove, where the Overlook dairy collected the milk from the station. Underground pollution of the outside well by the privy might be possible, and the farmer has been advised to remedy this condition, although bacterial examinations made by the Department Laboratory of samples collected September 16 and 17 did not show any sewage contamination of either of the wells.

Location.	Bacteria per c. c.	B. Coli per c. c.
September 16—Well in kitchen,	9	0
September 17—Well in kitchen,	72	0
September 16—Pump house well,	64	0
September 17—Pump house well,	300	0

The fifth farm (operated by E. S. Jamison) is in Warminster Township, Bucks County, just north of Ivyland. About one-half of the milk produced was delivered by the farmer to private households, comprising an extensive route throughout Ivyland. For the current year up to the middle of October, the borough of Ivyland reported only one case of typhoid fever. There were eleven milk cows. Beside the farmer, there were his wife and mother-in-law, who, many years ago, had what was probably typhoid fever. There was also a hired man. There was no history of recent sickness. The privy was open to flies and only fifty feet from the milk house, although on the opposite side of a farm implement building. It also received surface wash and was 100 feet away from the well. These two points were called to the attention of the farmer who appreciated them and promised to effect a remedy. The milk cans were cooled in a trough supplied with water pumped from the well which was at the kitchen porch. The milk was shipped each morning by train to Willow Grove. Bacteriological examinations made by the Department Laboratory of samples collected September 16 did not reveal the presence of sewage organisms in the well water.

Location.	Bacteria per c. c.	B. Coli per c. c.
Well at kitchen porch,	5	0
House faucet (same source),	32	0

The sixth farm (operated by E. W. Luff) is in Northampton Township, Bucks County, a mile east of Grenoble Station. There were on the farm the farmer, his wife, two sons, a daughter and occasionally a certain one of his neighbors. There was no history of recent sickness. At the time of the investigation there were nine milk cows in a herd of fifteen. The cans were rinsed with cold water from a well at the kitchen porch. The milk in the cans was cooled in a spring house and shipped each morning by train from Grenoble Station to Willow Grove, the same train carrying the milk from Ivyland. The spring house is flooded at times by high water in a nearby stream of which the drainage area above is about 500 acres, containing five farmsteads and a schoolhouse. A house to house inspection has been made of this drainage area by an officer of the Department, revealing no stream pollutions. In a number of instances kitchen and laundry wastes are thrown on the ground and might readily be carried to the stream by heavy storms, but there was no history of typhoid fever or any intestinal disturbances on the drainage area during recent years. Bacteriological examinations made by the Department Laboratory of samples collected September 17 revealed the presence of sewage organisms in the water in the spring house. The farmer was notified by telephone and warned of the condition of the spring. He cleaned out the spring house, and examinations by the Department of a sample collected by a Department officer September 28 did not reveal the presence of sewage organisms.

Location.	Bacteria per c. c.	B. Coli per c. c.
September 17—Well at kitchen porch,	48	0
September 28—Well at kitchen porch,	2	0
September 17—Water from spring house,	1,260	6
September 28—Water from spring house,	3	0
September 28—Water from spring house,	4	0

The farmer was notified by letter of the importance of thoroughly cleaning the spring after its being back flooded and of protecting the milk from even the slightest contamination with the spring water during such times.

The first of the Overlook Farms, Terwood (run by John McKee), is in Moreland Township, a couple of miles east of Willow Grove. There were about twenty-five cows. The farmer and his wife attended to them. There was no history of recent illness. There is a dug well at the kitchen and one at the milk house near the barn. The cans were rinsed with cold water from one of these wells. Bacteriological examinations by the Department Laboratory of samples collected from these wells September 28 revealed the presence of sewage organisms in the one taken from the milk house well, and the dairy

was promptly instructed not to use this, at least until the condition had been remedied. The milk in the cans was cooled in a concrete trough in the milk house, filled with water sometimes from the well and sometimes from a neighboring run by means of a ram which furnishes water to the cattle trough in the barn yard. The milk trough was iced daily. The milk was taken by wagon to the bottling house in the morning during the winter time and in the evening during the summer. Two privies are located not very far from the milk house and are not adequately protected from flies.

At the "home" dairy farm of the Overlook Farms (run by Ellwood Walt) the dairyman reported having done all the milking entirely unassisted since spring, although previously he had received occasional assistance from general farm employes. Several of these live in tenant houses in the immediate vicinity. The dairyman had not experienced any illness. There were about twenty-five cows. As the cans were filled during the milking they were placed in a covered concrete trough containing ice water in one of the bottling rooms of the dairy. Springfield water is used around the farm and dairy; none of the several samples examined by the Department Laboratory during the investigation revealed the presence of sewage organisms.

The Francis farm (run by Howard Cramer), the third of the Overlook Farms, is located in Abington Township, Montgomery County, on the Welsh Road, a mile south of Willow Grove. There were about twenty-five cows. The milk in the cans was cooled in a trough fed with water piped from a spring distant from the barn several hundred feet at the edge of a wood which covers the top of a long ridge. There are no habitations above the spring, but it might receive chance contamination from anyone wandering in the wood or obtaining a drink by dipping from the spring. This latter practice is readily possible and customary among the farm employes when they happen to be in the vicinity. Bacteriological examinations made by the Department Laboratory of several samples collected during the investigation failed to reveal any sewage contamination of the spring.

The farm privy and also an accumulation of domestic waste water from the farmhouse were at the edge of the pasture used by the cows and not far from where they left it to enter the barn to be milked. The milk was taken to the bottling house by a wagon in the morning during the winter and in the evening during the summer.

The farmer and his wife attended to the cows and the milking. One farm hand, occupying a tenant house five hundred feet or more distant, was around the place in connection with the general farm work and got his milk supply from this farm. This man is reported to have had typhoid fever about five years ago. A sister (Elsie Cramer) of the farmer was visiting the place July 14 to August 4, and August 15 to about the end of September. She is reported to have had typhoid fever about seven years ago. Seventy-five children from the

Harrison Day Nursery, Nineteenth and Ellsworth Streets, Philadelphia, spent about two weeks' vacation the past summer at the farmhouse on the Francis farm.

The bottling establishment comprised two screened rooms with masonry walls and cement floors with drains for flushing. One of them communicated with the cow barn of the "home" farm, but the door was kept closed and, except at milking time, it was locked. In this room were the icing trough, where the milk from several farms was kept in cans until it was bottled; also the cream separator and the milk centrifrugal clarifier through which all the milk was passed effecting a mechanical separation of impurities.

Ordinarily the entire cream supply was gotten from Peter Hernig, 2009 Mascher Street, Philadelphia, who has a very large wholesale business, and did not have any trouble from a general prevalence of typhoid fever among his customers during the summer. From August 3 to September 8, the Overlook dairy separated some cream of its own from surplus milk, using only milk taken from the shipments received via the railroad. All the cream was bottled and capped by hand in this room.

The milk bottling room communicated with the clarifier room and contained an ice box, milk bottling machine, two stationary washing tubs and a rotary brush bottle washer. In an alcove was a steam boiler so that steam was available for heating the water and sterilizing the cans. The ice box was used for the cream from the city and for keeping the cases of bottled milk and cream from about noon of the day they were filled until the delivery wagons started out about three o'clock the following morning. The box was iced from an outside entrance. The bottling machine was a portable one with four filler connections. The machine was washed out daily with the hot water and washing compound after the bottles were washed in it. Then a steam jet was passed over the surface.

The two tubs for washing the bottles were of the style and size of stationary laundry tubs and were made of wood. The tubs were nearly filled, leaving room for the bottles, and the water was heated from time to time by means of a steam jet. A washing compound, sold especially for milk bottle washing, was dissolved in the water in one of the tubs and the other was used for rinsing the bottles. They were returned from the milk routes, some of them previously cleansed and some of them with a residue of sour milk, and were placed in the wash water. Under such a procedure some water enters the bottles, but for the most part they turn bottom up and float, holding a great deal of air, so that in many instances there is no soaking of the milk bottles. The bottles were taken by hand, one at a time, and washed on the power-driven, rapidly revolving brush mounted directly above the tub, after which they were dropped into the rinse water. Here

they remained a short time with much air in them and were taken out and placed tops down in the wire-bottom delivery cases where they remained stacked until they were used for the following morning's milk. Thus there were two sets of bottles in service. About one thousand were handled each day.

The cans in which the milk was brought by wagon from the nearby farms were emptied at once into the milk clarifier and were then washed by the man who had delivered the milk before being taken back to the farm. This might be before the bottle washing water had been made ready, in which case the man washed the cans according to his own judgment. After washing, they were inverted on a board over a steam jet for a few seconds. The cans shipped in by railroad were washed by the men at the bottling establishment, the water used for the bottles being used also for the cans. Afterwards they were inverted over the steam jet.

The Overlook milk and cream was all bottled at the dairy and the drivers were forbidden to exchange milk on the road with any other dealers or to open the bottles for any reason, and it is believed that this was pretty generally adhered to. Some certified milk from Willow Brook, a neighboring dairy, was sold from the Overlook wagons.

The clarifying of the milk, the separating of the cream, the bottling and bottle washing were attended to by the milkhouse man (David E. Cloud), who had been attending to this work for several years. He had typhoid fever thirteen years ago, but there had been no previous trouble with the milk or anything to cast suspicion on this man as a "carrier." Since May 30 he had had, successively, three assistants, none of whom had ever had typhoid fever.

Four delivery wagons and routes were maintained by the Overlook dairy and covered the suburban district previously described. Route No. 1 included the community known as Wyncote and outlying districts in Cheltenham and Abington Townships, and the western part of Jenkintown Borough. Route No. 2 covered the territory to the west of No. 1, including Glenside and Edge Hill and places along the route from there to the distributing station, including Weldon and Roslyn. Route No. 3 covered the territory lying east and south of No. 1, including the eastern part of Jenkintown and Ogontz and Ashbourne. Route No. 4 included the district along Old York Road from the distributing point southerly to Jenkintown, taking in Abington, Crestmont and Noble, and extending easterly from the York Road taking in Rydal and Meadow Brook, and also extending northerly to Willow Grove. Routes Nos. 1 and 3 included more closely built-up territory and each had perhaps 25 per cent. more patrons than either Route No. 2 or Route No. 4. In all, upwards of 900 households were served with milk daily.

Other Milk Supplies.

At other dairies in the district the conditions and the methods of handling and washing milk bottles were about the same as at the Overlook dairy, according to the reports of the local boards of health. These boards prohibit the collection of milk bottles from houses where there are cases of communicable disease, and municipal stations are provided for sterilizing the bottles from such houses after the lifting of quarantine.

Typhoid Fever.

Fifty-one cases of typhoid fever occurred in the district above described from the beginning of the year up to the end of September, and from the census of these cases made by Department officers, the following tables have been compiled:

Dates of Onsets.	Number of Cases.	Dates of Onsets.	Number of Cases.
Jan. 25,	1	Sept. 2,	3
April 10,	1	Sept. 3,	2
May 17,	1	Sept. 4,	3
June 10,	1	Sept. 5,	1
July 7,	1	Sept. 6,	3
July 17,	1	Sept. 7,	2
July 18,	1	Sept. 8,	1
July 31,	1	Sept. 11,	1
Aug. 4,	1	Sept. 14,	1
Aug. 21,	1	Sept. 16,	1
Aug. 24,	2	Sept. 17,	2
Aug. 25,	2	Sept. 18,	1
Aug. 28,	2	Sept. 21,	1
Aug. 29,	2	Sept. 22,	1
Sept. 1,	8	Sept. 24,	1
		Sept. 29,	1
		Total,	51

Age Period.	Number of Cases.		
	Male.	Female.	Total.
0- 4,	3	1	4
5- 9,	8	4	12
10-14,	2	1	3
15-19,	4	3	7
20-24,	2	5	7
25-29,	2	3	5
30-34,	1		1
35-39,	1	3	4
40-49,	2	4	6
50+,		2	2
Total,	25	26	51

Occupation.	Number of Cases.	Occupation.	Number of Cases.
Child,	7	Machinist,	1
School vacation,	12	Garage keeper,	1
At school,	4	Clubhouse waiter,	1
Housewife,	7	Ticket taker,	1
Maid-servant,	8	Iceman,	1
At home,	1	Hospital nurse,	1
Office man,	4		
Artist,	1		
Candy wrapper,	1	Total,	51

LOCATION OF TYPHOID FEVER CASES.

Place.	Municipalities.			
	Jenkintown borough.	Cheltenham township.	Abington township.	Moreland township.
Ogontz,		4		
Jenkintown,	11		3	
Oak Lane,		1		
Noble,			3	
Edge Hill,			1	
Wyncote,		9		
Crestmont,			4	
Abington,			3	
Glenside,		1	3	
Ashbourne,		1		
Willow Grove,				1
Meadow Brook,			1	
Elkins Park,		1		
Philadelphia,			*3	
Burlington, N. J.,				**1
	11	17	21	2

*Probably infected at Francis farm (near Willow Grove), Abington township.
**Perhaps infected at Overbrook farm (near Willow Grove), Moreland township.

Water Supplies in Typhoid Fever District.

Springfield Consolidated Water Company,	21
Moreland Spring Water Company,	24
Dug well,	2
Artesian well,	*4
Spring,	3
Willow Grove Park supplies,	†3

*Three in connection with Moreland Spring Water Company.
†Two in connection with Springfield Water Company and one in connection with Moreland Spring Water Company.

Other Water Supplies.

Philadelphia,	11
Hatboro, N. J.,	1
During trip,	3
Pocono Pines,	1
Burlington, N. J.,	2
Delaware River Excursion Boat,	1
Atlantic City, N. J.,	3
Cape May, N. J.,	2
Croyden,	1
Flatbrookville, N. J.,	1
Wayside Springs,	1
Wormleysburg,	1

Milk Supplies from Overlook Farms.

Route No. 1,	13
Route No. 2,	7
Route No. 3,	10
Route No. 4,	13
Bottles from dairy,	1
	44

Other Milk Supplies.

Own cow,	1
Haas,	2
Frank Taylor,	5
Folly Farm,	2
J. N. Yerkes,	1
Wawa Dairy,	1
Walter J. Taylor,	1
Bert Margarum,	1
Private supply,	1

The data collected relative to the use of uncooked vegetables and fruits did not reveal that there might have been any common source of typhoid fever infection among them. A great many of the patients were dependent upon home gardens.

The number of children, housewives and maid-servants and the wide distribution of the cases indicate very clearly that the typhoid infection was spread within the homes rather than at any community gathering. The eight cases among maid-servants account for the preponderance of females among the cases over sixteen. The dates of onset indicate that the infection of all the cases did not occur at the same time but rather that the infection dragged over a considerable period, except for the group of cases which developed about September first.

The use of the water of the Moreland Spring Water Company by twenty-four cases and of the Springfield Consolidated Water Company by twenty-one cases, which developed not in any particular order throughout the epidemic, indicates pretty clearly that these public water supplies were not factors in the spread of the infection. Moreover, the Springfield water is distributed throughout a district very much more extensive than that in which this epidemic developed, and investigation revealed that the disease was not prevalent throughout the rest of the district. The number of cases which used Moreland Spring water is a very small proportion of the total number of consumers supplied by this system. Samples of the public supply were collected by Department officers at practically all the houses where typhoid fever cases had developed and were examined by the Department Laboratories. These examinations did not reveal the presence of colon bacilli in any instance.

That forty-four typhoid fever cases had used Overlook Farms' milk is most significant, especially since all the cases having onsets on August 24, or subsequently, with a single exception, had ued this milk. It was only after this date that the grouping of the cases and attendant circumstances indicated a common source of infection. One case with onset September 8 is not reported to have used Overlook milk and its source of infection remains undetermined.

All of the first ten cases had been out of the district for extended tours, summer vacations or short trips of sufficient duration or under sufficiently suspicious circumstances, and, moreover, they were sufficiently scattered as to dates of onset and location so that there is nothing extraordinary in their not having been traced to any common source of infection within the Jenkintown district. It is true that five of these cases used milk from the Overlook Farms, but it must be remembered that this supply was very generally used.

The first case may be pretty definitely attributed to private milk bottles from a neighboring household in which typhoid patients were convalescing after onsets in December, 1914. The infection of these original cases probably came from the pollution of a private well by the stream below Jenkintown.

The eighth case of the year, tabulated with an onset July 31, was the mother-in-law of one of the farm hands at the home farm of the Overlook dairy. She visited her daughter at the tenant house, about 2,000 feet from the dairy bottling house, from August 18 to 25 and September 1 to 8. Between these periods she was at home in Burlington, N. J., somewhat indisposed, but she did not see a physician. While at the Overlook Farms she assisted in her daughter's housework, including washing milk bottles (in which milk was received directly from the dairy bottling house) before they were returned. She also used the dairy milk in tea and coffee. This woman may

possibly have been a potential source of typhoid fever infection at the time of her first visit to Overlook farms and she may thus have been a factor in the spread of the disease through the agency of the Overlook milk. Yet, it is also quite plausible that the slight indisposition which she expereinced commencing July 31 may not have been typhoid fever and that she contracted the disease from the milk during one of her visits at the Overlook farms. Samples of feces were obtained from the privy used by her while at the Overlook farms but not until a month after the end of her last visit, so that no definite conclusion can be drawn from the fact that typhoid fever bacilli were not found in the examination of these samples by the Department Laboratories. The woman died about the end of September, in Burlington, of an attack brought on by gall stones. A Widal test of her blood the day before she died was positive for typhoid fever, so it is reported. This was the first evidence which was at all conclusive of her having had the disease.

The ninth case of the year, with onset August 4, was not placarded by the local board of health, and during the illness of the patient at her residence in Ogontz the household was served with milk by the wagon of Route No. 3 of the Overlook Farms until about September 16, when the family discontinued the supply. The bottles were cleansed with no especial precautions or disinfectant and returned to the dairy, the milkman having no knowledge of the presence of disease in the household. Little or no disinfectant was used in the household throughout the course of the disease and the family did not seem to be aware of the extreme danger of the spread of infection. However, there were no secondary cases in this house. The patient had been on a day excursion steamer down the Delaware River in July and may very likely have contracted the disease at this time. She did not know where the drinking water was obtained, but it was not palatable. The case was very light, the patient was in bed only three weeks and was back at work as a candy wrapper within four or five weeks. Widal tests and examinations of samples of stools and urine were all negative, which, of course, makes questionable whether this case was a factor in the spread of the disease in the community.

The contamination of a few milk bottles with typhoid fever germs by one or both of the above-mentioned early cases or, perhaps, from some undiscovered source and not at all from those mentioned is indicated by the course of the epidemic. A contaminated bottle returned to the dairy would very probably have passed through the washing process without the germs being eliminated and might, indeed, have spread them to other bottles so that not only the original bottles, but a few others, would carry typhoid fever infection into households with the next distribution of milk.

Among the children of the Harrison Day Nursery, Salvadore Lanoce, aged 11 years, was at the Francis farm of the Overlook Farms from August 17 to 30, and was among the oldest there at that time. He was around the barn probably more than any of the other children and he rode in the wagon delivering milk to the dairy. Upon the outbreak of the epidemic the manager of the dairy remembered the children with suspicion, especially this one who had been so closely in touch with the handling of the milk. He investigated, found that the boy had since had symptoms of typhoid, and jumped at the conclusion that he had been the cause of the epidemic. He voluntarily discontinued the use of the milk from this farm. The boards of health of the townships affected investigated the circumstances and prohibited the use of the milk until a later date. An account of the findings of the local health authorities was published in the postscript edition of the Philadelphia Evening Ledger of September 16 and in the Times Chronicle of Jenkintown of September 18, attributing the epidemic to Salvadore Lanoce.

Salvadore Lanoce, of 1219 South Thirteenth Street, Philadelphia, was taken by his mother to a Philadelphia hospital dispensary September 2, with a headache. On September 8 he was admitted to the Methodist Hospital, Broad and Wolf Streets, Philadelphia, with symptoms of typhoid fever. Widal tests of his blood were negative September 8 and positive September 15. The onset is taken as September 2. The theory developed by the several local health officials and the dairy manager was that Salvadore experienced the early stages of typhoid fever while at the farm and infected the privy, which was accessible to flies and at the side of the cow pasture, perhaps 75 feet from the milking stable. It was assumed that the cows, passing the privy on the way into the stable, attracted the flies to themselves and carried them into the stable where they, in turn, infected milk cans, buckets and cloth strainers. Also the boy probably handled some of the utensils. It was upon this theory the dairy manager voluntarily discontinued this milk supply.

It was suggested that during the first days of his visits Salvadore may have contracted typhoid fever from swimming in a small stream which flows within one hundred yards of the farm house. A detailed inspection was made by officers of the Department of the entire drainage area above the Francis farm and of the conditions existing at each habitation relative to sewage and waste disposal and as to whether any intestinal disturbances had been experienced by any one on the property during the summer. No instance of domestic sewage contamination was revealed nor was any history found of any case of intestinal disorder except for those cases of the epidemic which were being cared for at the Abington Hospital situated on the divide at the head of this drainage area. At the hospital the preparation of

food for typhoid patients and the disinfection of their discharges is cared for by especially detailed nurses. The sewage of the institution including the disinfected typhoid wastes is discharged to a cesspool on the property. The ground is high and the sewage is cared for by percolation for considerable periods, and there is no evidence anywhere in the vicinity of its seeping out on the surface. It was last cleaned and the contents hauled away in January by a contractor from Jenkintown.

This same stream, just below the Francis farm, is used for wading by many of the boys of the children's village of the Seybert Institution, and no typhoid fever has developed there during the current season.

The theory that Salvadore Lanoce caused the epidemic was discredited by the finding of the second Widal test to be positive, indicating that this case of typhoid fever was probably normal and not sufficiently advanced to have been a source of infection while the boy was at the farm.

Under the supervision of Dr. A. A. Cairns, Chief Medical Inspector of the Bureau of Health, of Philadelphia, all of the seventy-five children who had visited the Francis farm were looked up by the city medical inspectors, who reported their general condition and also collected blood specimens for Widal tests from most of them.

Two others of the boys at the Francis farm at the same time as Salvadore Lanoce were revealed by the investigation of the Philadelphia inspectors to have developed typhoid fever after leaving the farm. One of these was there during August 16 to 30 and his date of onset was September 6, as given in the table. He was taken to the Children's Hospital, Philadelphia, and a Widal test was positive. The other boy was at the farm August 17 to 31 and developed typhoid symptoms with onset date of September 6. He was taken to the Children's Hospital, but a Widal test was negative and the case was diagnosed as para-typhoid. These three boys of the Harrison Day Nursery children who stayed at the Francis farm were infected through the Overlook milk supply just as were the other cases of the epidemic, so it is believed from the final results of the investigation, rather than that any one of them was even a contributing causative factor. The children at the farm were supplied with bottled milk delivered by one of the regular wagons of the dairy just as other customers were supplied.

Remedial Measures.

It has been noted that the boards of health of the first-class townships and Jenkintown Borough had taken elaborate steps toward an investigation of the Overlook dairy and that as a result the milk from the Francis farm had been discontinued.

Subsequent to the Department engineer's investigation of the independent farms furnishing the auxiliary supply of the Overlook dairy, his attention was directed in detail to sewerage conditions in connection with one of the typhoid cases in particular, and after this could be disposed of the operations at the Overlook dairy bottling house were taken up.

Samples of the wash water and rinse water from the bottle washing tubs at the Overlook bottling house were collected September 21 and examined by the Department Laboratories. At the same time a sample was collected of the fresh water supply which is furnished by the Springfield Consolidated Water Company and delivered to the tubs through a short length of rubber hose, from the end of which the sample was taken. The results of examinations of these samples are as follows:

	Bacteria per c.c.	B. Coli per c.c.
Wash water,	486,000	0
Rinse water,	432,000	81,000
Fresh water,	10,260	0

The absence of colon bacilli in the wash water may have been due to the disinfecting influence of the washing compound in the sample during transit. However, the evidence is conclusive that colon were carried over unaffected into the rinse water where the colon count was very high. Although the sample of Springfield water showed a high total count, colon bacilli were not found in any samples of it and numerous ones were collected during the investigation.

The superintendent of the dairy was advised that the method of washing the milk bottles was not adequate and that their condition was a serious menace to public health and had most likely been the principal factor in the spread of the epidemic. He was instructed that the bottles could be sterilized by boiling them, until some more permanent and practical installation could be made. Both the proprietor of the dairy and the superintendent were advised that only by installing a heat sterilizer for the bottles could absolute safety be assured.

As a temporary makeshift, the dairy hands attempted to keep the wash water always as hot as possible and more than ordinary attention was directed to the mechanical cleansing with the brush, and some of the bottles, in which the milk was more resistant to cleaning, were discarded.

Some more radical change in the cleaning of the bottles was indicated to be necessary by close scrutiny of the above procedure and the

results accomplished, even though at this time the typhoid fever epedimic had practically run its course.

The use of chlorinated lime in the wash water as a disinfectant was decided upon October 1 as a necessary emergency measure, and the dairy authorities were so advised. About one part of the chemical to 5,000 or 10,000 parts of water was used. A concentrated solution of boric acid was kept handy for the men to use after having their hands in the water so as to minimize the effect of the bleach. The usual washing compound was used in the same water. An effort was made to have the men place the bottles in the tubs so that they would fill with disinfecting water instead of remaining nearly full of air. The bleach assisted very noticeably in the cleansing of the bottles. An ordinary wash tub was used for an additional rinse water, and by keeping the rinse water hot no difficulty was experienced in getting all the taste and smell of the lime out of the bottles, although care was necessary. Undoubtedly very much better results were obtained toward getting sterile bottles than under the previous crude method of washing. However, the results were still dependent upon the attention of the men to individual bottles both in placing them in the tub and in washing them on the brush and, obviously, such a method could not be considered permanent. The proprietor of the dairy was convinced of the need of something more adequate and proceeded to have an estimate and plans made for a sterilizing oven.

However, before a sterilizer was installed the dairy discontinued the use of the disinfectant without informing this Department, and subsequently there was a localized outbreak of typhoid fever among the consumers served by one of the Overlook milk wagons. This outbreak was investigated by the Medical Division of the Department.

The Folly farm dairy was at this time installing a bottle sterilizer, having seen the desirability of such a safeguard, although but one or two of the typhoid fever cases had used milk from this source.

At the Francis farm a more sanitary privy had been provided and the contents of the old one had been cleaned out and buried with lime and the vault had been thoroughly limed and lime had been spread around it and over the accumulation of waste water from the house. The farmer and his wife attended entirely to the milking and had been subjected to Widal tests, as had the farmer's sister living with them, and all the tests had shown negative results for typhoid fever. Moreover, the suspicion of this farm had proved to be much less justifiable than at first determined upon by the local boards of health. On October 1 or 2 they authorized the dairy to resume the use of milk from this source with the entire approval of the State Department of Health.

The auxiliary milk supplies from the independent farms were not needed and were discontinued and not used after October, because the trade of the Overlook dairy had fallen off following the epidemic.

In investigating the typhoid fever case on the property of Henry Specht in Moreland Township, near Willow Grove, it was discovered that a recent abatement of one stream pollution at the rear of this property, in accordance with an order issued by this Department through the sanitary inspection section, had been accomplished merely by installing an overflow pipe from the cesspool receiving all the house sewage to a large storm water culvert at the front of the property, the work being done at night in the absence of any Department inspector. On September 18, this overflow pipe was dug up and disconnected; also a hole was dug in the back yard for the wastes, wash water, etc., from the patient, after they had been disinfected. A trained nurse was in charge of the case at this time. However, the patient had previously used the sanitary conveniences of the house and it was suspected that the cesspool might contain typhoid fever infection. The continued discharge of sewage from the house threatened to cause it to overflow. Sunday, September19, it became evident that the cesspool would overflow in spite of all precautions, so a chemical disinfection was provided for. Upon the emergency represented by the Department's engineer, the Philadelphia Rapid Transit Company let Mr. Specht have about thirty pounds of chlorinated lime from their sewage treatment plant at Willow Grove Park. A wooden spigot was adjusted in an oil barrel so that the disinfecting solution could be dosed continuously into the overflow from the cesspool. The Department's local health officer at Willow Grove was instructed to visit the apparatus three times a day and see that the chemical mixture was replenished when needed, and other Department officers also kept the apparatus under observation.

To abate the overflow from the cesspool the main house drain was disconnected, a temporary privy was set up in the back yard with a half barrel and the waste water from the house, not including any used in the care of the patient, was thrown out in the back yard. A hole about five feet in diameter was dug alongside of the cesspool and about five feet deep to a depth where the ground water began to come in pretty rapidly. Then an opening was cut in the earth wall separating the two cesspools and the sewage in the older one was thus drawn down one and one-half to two feet. However, the water level in the two cesspools commenced to rise and excavating around the edge of the old cesspool revealed two pipes coming into it on the side opposite from the house and discharging a steady and considerable volume of compararti vely clear water. This was certainly not from the house on the property where the typhoid patient was. It seemed to be polluted water from the sewage saturated ground of this and the neighboring property. A one hundred pound drum of chlorinated lime was procured from a chemical house in Philadelphia and a load of lime was gotten from a neighboring kiln, and the contents of the

two cesspools were thoroughly disinfected. Samples collected Sunday, September 26, from the old cesspool and the new one dug to lower the sewage level and also from the unknown pipe were examined by the Department Laboratories, showing the following results:

	Bacteria per c.c.	B. Coli per c.c.
Specht's old cesspool,	109	0
Specht's auxiliary cesspool,	20	0
Unknown pipe on Specht property,	200,000	70

It should be noted that these samples from the cesspools showing low total counts and entire absence of colon were collected after all connections from the house where the typhoid fever patient was had been severed. A day or so after this the cesspool was again overflowing, but it was believed the danger of typhoid fever infection of the stream had been largely eliminated. The Division of Sanitary Inspection is proceeding with the task of having the stream pollution abated.

The pollution of Pennypack Creek, by typhoid-laden sewage from the Specht property, before the Department inspection revealed it, was a dangerous menace. The stream is accessible to dairy cattle and its banks are traversed by a good many children who sometimes swim in it, and the season of the year was not too late for swimming. Consequently, notices giving warning of the danger of drinking the water or swimming in it were posted conspicuously along the banks of the stream and especially at points of access from public roads. This was done September 20 and 21.

The pollution of Tacony Creek by sewage from some of the typhoid fever cases in Jenkintown was also a menace, and the Cheltenham Township board of health was so reminded, and through them the banks of this stream were placarded with warning notices.

All the local boards of health were urgently and repeatedly reminded of the importance of seeing to it that the discharges and laundry wastes of all the typhoid fever patients were thoroughly disinfected and properly disposed of. The local health authorities were also reminded of the great importance of placarding all houses immediately upon the reporting of typhoid fever cases, especially for the information of milkmen, and the authorities were directed to see to it that the milkmen lived up to the regulations requiring them to not leave bottles or touch milk containers at houses where there was typhoid fever and also that they gave scrupulous care to the cleansing of milk bottles in regular trade.

In some instances a day or so had elapsed between the reporting and placarding of cases, although no cases had been skipped entirely,

so far as known, except for the case of August 4 which may have been a major factor in the epidemic through the return of milk bottles.

Although bacteriological examinations failed to reveal that there might be any danger of typhoid fever being spread in the future through the agency of this case, every effort was made to make the patient realize the importance of absolute personal cleanliness for any one occupied in the handling of cans, and the information given was received with appreciation.

It is of interest to note that the employes at the Abington Hospital, in Abington Township, were treated with typhoid vaccine, with the exception of one of the nurses, and that this nurse alone of the employes came down with typhoid fever, the date of onset being September 22. Nine of the patients of the epidemic had been at this hospital.

The greatest amount of detail was necessary, in order to convince persons interested that milk, and milk alone, was the most probable source of infection.

A total of twenty-four additional cases of typhoid fever, sickening between the 14th of November and the middle of December, was also investigated. The greatest number of onsets in any one day were two and the bulk of the infection incurred in a seven-day period—from the 17th to the 26th of November, inclusive. In the extended study made in September the conclusion was drawn that the infection was undoubtedly milk-borne, although it was never clearly proven as to just where the infection entered the milk.

In the last twenty-four cases studied it was not possible to draw any more definite conclusion than that the milk was polluted somewhere between the place of its production and the place of its consumption. Every employe of the Overlook Farms who had anything to do with the bottling of the milk, either on these farms or from the seven farms' output used to supplement this supply in the delivery, was investigated, both as to blood, feces and urine, without finding a definite carrier. Judging by the scattered distribution of cases and by the opportunities afforded for bottle infection, it seems entirely probable that the undue prevalence of typhoid fever along this milk route may be charged to inefficient sterilization of bottles and to their contamination, either in homes of persons sickening with typhoid fever prior to recognition and report of the disease or to some mild, unrecognized cases that were never reported.

The heartiest cooperation was given to our work by local health authorities and by each householder; and particularly hearty cooperation was given by the owners and managers of the Overlook Farms and the farms furnishing the auxiliary supply to the Overlook manager, the owners of this dairy even going to the extreme precaution of employing competent bacteriologists to make extensive and

repeated studies of urine and feces of their own and other employes having anything to do with the production of the milk, and resulting in their final complete abandonment of a costly dairy without having secured definite knowledge as to the exact source of infection.

The usual tabulation of these twenty-four cases by ages of onsets, age periods, use of uncooked vegetables and fruits, milk, water, etc., is given in tabular form, but shows nothing of real practical value. The general error in technique, and an error that was in all probability responsible for failure to sterilize bottles, was that of discontinuing the use of chlorinated lime solution in the rinsing and sterilization tanks that was instituted at the time of the investigation in September. Re-establishment and rigid enforcement of this regulation in December seemed to show a marked diminution in the number of cases, a diminution that took place prior to the discontinuing of the sale of milk.

DATES OF ONSETS.

Date.	Cases.	Date.	Cases.
Nov. 14,	1	Nov. 25,	2
Nov. 16,	1	Nov. 26,	2
Nov. 17,	2	Nov. 27,	1
Nov. 18,	2	Nov. 30,	1
Nov. 20,	2	Dec. 19,	1
Nov. 21,	2	Dec. 21,	1
Nov. 22,	2		
Nov. 23,	2		
Nov. 24,	2		24

Ages.	Total.	Male.	Female.
0- 4,	5	1	4
5- 9,	4	2	2
10-14,	3	3	0
15-19,	1	1	0
20-24,	0	0	0
25-29,	3	2	1
30-34,	2	1	1
35-39,	1	0	1
40-44,	3	3	0
45-49,	2	2	0
	24	15	9

Ice Cream.

Yes,	8
No,	16
	24

Use of Vegetables and Fruits.

Uncooked,		11
Raised at home,	8	
At market,	3	
None uncooked,		13
		24

Milk.

Overlook,	19
Willowbrook and Overlook,	3
Overlook and Taylor,	1
Overlook and Supplee,	1
	24

Water.

Springfield,	12
Moreland Spring,	9
Artesian well,	1
Dug well,	2
	24

One definite secondary case developed and this case is one of particular interest. Miss D., a nurse in the Abington Hospital, was immunized against typhoid fever by the local hospital authorities during the time of the September outbreak. The hospital notes with reference to her immunization (by the house physician, Dr. G. S. Woodard) set forth clearly that this nurse received the usual dose of five million of Mulford's sensitized typho-serobacterin on the 16th of September and one thousand million of the same bacterin on the 22nd and 29th of September. The bedside notes in the hospital show that she sickened with typhoid fever on November 20th, and when seen on December 2nd with the visiting staff of the hospital and Dr. Baggs of Abington, showed all of the classical symptoms of typhoid fever, with a most profuse crop of rose spots, and with a temperature of 104 degrees. Her blood taken a few days after this visit showed B. Typhosus in pure culture.

TYPHOID FEVER IN DANVILLE STATE INSANE ASYLUM AND IN THE BOROUGH OF DANVILLE, MONTOUR COUNTY.

An investigation of an epidemic of typhoid fever at the State Hospital for the Insane near Danville, Montour County, and in the town of Danville was jointly engaged in by the Divisions of Medical Inspection and Sanitary Engineering during August and September, 1915.

The following named officials of the Department of Health took part in the investigations: Dr. B. F. Royer, Chief Medical Inspector; Acting Chief Engineer C. A. Emerson, Jr.; Dr. George K. Strode, Acting Associate Chief Medical Inspector; Dr. Cameron Schultz, County Medical Inspector; Assistant Engineers H. E. Moses, C. L. Seibert, S. R. Parke, Jr.; Inspector J. B. Aurand; and Department Nurses Margaret C. Parsons and Sara Butler.

The epidemiological features, medical observations, engineering, water and sewerage investigations are combined in this report.

The Asylum epidemic embraced one hundred thirty-five cases of typhoid fever, which developed between August first and September twenty-eighth.

The report of the investigation of the town epidemic follows immediately after the report upon the Asylum outbreak. The town cases totaled one hundred and twenty-one.

THE EPIDEMIC IN THE HOSPITAL.

The State Hospital for the Insane is situated in Mahoning Township, Montour County, on a promontory overlooking the North Branch of the Susquehanna River about one and one-half miles up-stream from the borough of Danville, the county seat. The lower end of the Institution grounds abuts on the up-stream end of the borough of Danville's incorporated territory, but the main part of the borough is approximately one and one-half miles distant and there is a stretch of open territory but little populated between the Institution buildings and the upper end of the built-up part of the borough. The buildings are commodious and placed on a high ridge possibly 150 feet above the river and north of this stream approximately a quarter of a mile. All of the Institution buildings are on this eminence except the water filtration works and pumping station and several cottages occupied by employes located along the main highway leading into Danville. All of these buildings are on the flats which extend back from the river about an eighth of a mile to the foot of the slope where the tracks of the Delaware, Lackawanna and Western Railroad lie.

The principal Institution buildings are used for residential purposes and comprise a main building dividing into an administration division and wards, and detached buildings comprising the acute wards and infirmaries for both male and female, a nurses' home, a power plant, laundry, laboratory, dormitory for employes, and various outbuildings, among which are barns and piggeries, near by which is the farmer's residence. All of the buildings except the acute wards, infirmaries and nurses' home are to the rear of the central or main building. They are, with the exception of the farm buildings, grouped near the central building on a high plateau draining to the



State Hospital for the Insane, Danville, Pa.

north to Toby's Run and on the south to Hospital Run. The first named stream enters the river near the upper end of the Institution grounds a short distance above the intake of the water works. The other stream practically marks the lower end of the Institution property entering the river about one and one half miles above the water works intake of the municipal system in Danville. This stream receives the effluent from the Institution sewage treatment plant. The entire Institution is furnished with filtered water, the source of the supply being the river. The pumping station and filtration plant are situated on the flats approximately 500 feet back from the river just south of Toby's Run. Between the filter house and the river is placed a brick pump well into which under normal conditions water from the river flows through a 16-inch intake pipe. The river end of the intake terminates in an iron box with holes in the side, this acting as a screen. There is also an 8-inch intake pipe connected to the pump well terminating in the river several hundred feet up-stream from the 16-inch pipe, but it is claimed that this is never used and presumably is filled with sediment. From the pump well a 12-inch suction line extends to the pump station built adjacent to the filter house. When the river is high difficulty is experienced in securing a sufficient supply of water through the 16-inch gravity intake pipe and a pipe has been installed connecting the suction with the intake, this making it possible to pump directly from the river. At the pump well a small centrifugal pump has been installed for removing the sediment collecting in the well. This amounts to a considerable quantity owing to the large quantity of culm carried in suspension in the stream.

Prior to 1903 unfiltered water was served the Institution and formerely an intake was maintained in Toby's Run. At this time a filtration plant was installed and three wooden filter tubs were placed over a filtered water basin, one being used as a sedimentation tank and the other two serving as filters, each having a rated capacity of 300,000 gallons of filtered water in 24 hours. Later, about 1909, extensions were made to the pumping station and filtration works so that at the time of the epidemic the pumping equipment consisted of two low lift pumps placed in a pit at the north end of the filter house and two high service pumps situated in the pump house immediately adjacent to the filter plant. The filter equipment comprises a wooden sedimentation tank where sulphate of alumina and a solution of chlorinated lime were added to the raw water and four wooden filter tubs in position over the clear water well. Two of these tubs are those originally placed there, each 12 feet in diameter, and the two new tubs are each 13 feet in diameter. The plant operates on an average of 20 hours daily and approximately 700,000 gallons represent the consumption in 24 hours.

The piping layout as it existed prior to July 28, 1915, when certain alterations were made because of the contemplated installation of two new high pressure pumping units, had a 12-inch suction from the pump well to the pump station, from which at the pump station there were three branches, one to each of the two low lift raw water pumps and a third to the two pumps that handle the filtered water. From these latter an 8-inch diameter force main extends up the hill to the Institution. The connection between the high service pumps and the pump well has heretofore been maintained for emergency use in case of an extensive conflagration at the Institution. However, there was a valve on this line immediately outside of the building and between the valve and the pumps a sheet tin blank cut to fit the pipe was placed with rubber gaskets between flanges. The record is that this device was installed about eight years ago by the chief engineer, he having an idea that possibly the pumps were getting air through this emergency intake. It was also reported that the valve on this line has been closed all that time and that the blank was in the position in which it was originally placed until July 28, 1915, when it was removed at the time the alterations in this pipe line were made. Under the circumstances it seems that the opportunity for raw water finding its way through the emergency suction pipe into the filtered water pumps and hence to the Institution was exceedingly remote. On July 28, 1915, one of the high service pumps was removed from the building and the location of the emergency suction line changed so that it could be connected to the two new filtered water pumps intended for installation.

On the highest point of land about the Institution back of the main buildings is situated the distributing reservoir. This comprises twin basins, each having a capacity of 1,300,000 gallons when filled to a depth of 9 feet 6 inches, which was not practicable at the time of the investigation due to leaks, to avoid which the inside of the reservoirs was lined with asphaltum above which a layer of concrete was placed.

Distributing pipes extend to all of the occupied buildings of the Institution. The force main leads from the pump house up the hill to the northern end of the main building, before reaching which point it passes by the nurses' home where a connection is provided. A branch is also taken from this pipe just outside of the pump house to the cottages situated along the highway on the flats. At the northern end of the main building the supply main connectes with the main distribution system which practically encircles the main building and from which a branch extends on up the hillside to the distribution reservoir with a supply main from the reservoir leading to the back of the main building and normally supplying water to the kitchen, power plant, laundry and employes' dormitory. It is, however, possible to furnish these buildings along with the other build-

ings with water pumped directly from the clear water well by passing the reservoir. A branch line extends across Hospital Run to the farm buildings and to the sewage treatment works. At frequent intervals along the pipe lines connections are made to fire hydrants on the Institution grounds. Inside the occupied buildings this water supply is used for all purposes, being the only one available.

At the time of the investigation steps were being taken to install a separate fire system which was to comprise a new force main and a new distribution system, all of heavy construction. It is intended, however, to use the filtered water supply for this system so long as it is available with a by-pass connection by means of which raw water can be pumped by the pumps that are ordinarily used for handling the filtered water for general purposes.

Weekly, a set of samples of sewage and filtered water is collected in containers furnished by the State Department of Health by employes of the Institution and shipped to the Department's laboratories for analysis. Five sewage samples and one sample of the general water supply are secured, this latter being taken from the Institution's laboratory, which building is back of the main building and usually supplied with water that has passed through the reservoir. For a period of practically one year before the epidemic out of all of the samples of water collected on only three occasions did the analysis show B. Coli in the water samples. These appeared as follows:

Date Received in Laboratory.	Bacteria per c.c.	
	Total.	B. Coli.
June 30, 1914,	176	1
Aug. 14, 1914,	1,680	1
July 31, 1915,	16	1

During the course of the investigation while the epidemic was on, frequent samples were collected of the Institution's water supply and analyzed by the Department, but on no occasion were any B. Coli found in the filtered water. The samples were secured from many points about the asylum and included some taken from fire hydrants on dead ends of pipe lines. When these were opened the water came for a very short time with slight turbidity, but soon cleared up.

Sulphate of alumina is added to the water for coagulating purposes and chlorinated lime is used in solution as a disinfectant. For about one month prior to August 1st, when the first case of typhoid fever appeared in the Institution, about 8 pounds of chlorinated lime were

used in the treatment of approximately 700,000 gallons of water and this average rate was continued until August 17, 1915, when the amount was increased to 9 pounds to 650,000 gallons, being further increased on the following day to 10 pounds and on the next day to 12 pounds. This rate was continued until August 30th, when the amount was increased to 18 pounds of chlorinated lime for 732,000 gallons of water, and this rate was continued until almost the end of the year when a slight reduction was made in the amount of chemical used.

The apparatus in use in the filter house for the introduction of chlorinated lime into the water is crude, being a wooden cask with an ordinary wooden stop-cock for a drip. It is operated entirely by hand control and regulated according to the judgment of the operator. On September 30, 1915, in compliance with instructions from officers of the State Department of Health, another barrel was installed at the filter house for the purpose of dividing the dose of disinfectant and putting part of it into the raw water and the remainder into the filtered water just at the point where the suction lines to the filtered water pumps enter the basin. This method of dosing was still being maintained at the end of the year.

All of the sewage of the Institution is treated in a sewage treatment works comprising coarse screens, a pumping station, sedimentation tanks, sprinkling filters, final settling tank, sludge bed and a disinfectant dosing house. The plant is to a large extent automatic in its operation, but is under the attention during the daytime of a caretaker. Putrescibility tests are made at the Institution, but the bacteriological analyses are carried on at the Health Department's laboratories. Approximately 500,000 gallons of sewage are treated here daily. The solution of chlorinated lime, which is the disinfectant used, is introduced into the effluent from the sprinkling filters just prior to its entrance into the final settling basin. After it passes through these basins it is discharged into Hospital Run back from the river about one-fourth of a mile. Among the other samples collected each week are one of the final effluent taken at the secondary settling basin and a sample from Hospital Run about 750 feet below the outlet from the plant. As indicative of the efficiency with which the plant is being operated there are shown in the following table results of analyses of samples collected for a period of about two months prior to the first of September, 1915. It will be noted that on two occasions during this time out of ten sets of samples B. Coli were found in the samples collected from Hospital Run. At the same time no B. Coli appeared in the samples of the final effluent from the plant. Hospital Run rises on the Institution grounds and drains cultivated land and possibly the presence of B. Coli in the two sam-



General View of Sewage Treatment Plant at the Danville State Hospital for the Insane.

ples in question may have been caused by drainage from cultivated fields. It is reported that there were excessive rains in the vicinity of the hospital at about this time. The table is as follows:

Sample Rec'd at laboratory.	Sample Taken.	Bacteria per c.c.	
		Total.	B. Coli.
6/29/15	Settling basin effluent,	15	0
6/29/15	Hospital Run below outlet,	32	0
7/ 6/15	Settling basin effluent,	48	0
7/ 6/15	Hospital Run below outlet,	56	0
7/13/15	Settling basin effluent,	2	0
7/13/15	Hospital Run below outlet,	19,440	18
7/20/15	Settling basin effluent (Dil. 1-100),	200	0
7/20/15	Hospital Run below outlet,	5,940	0
7/27/15	Settling basin effluent,	15	0
7/27/15	Hospital Run below outlet,	13	0
8/ 3/15	Settling basin effluent,	40	0
8/ 3/15	Hospital Run below outlet,	22,140	0
8/10/15	Settling basin effluent,	48	0
8/10/15	Hospital Run below outlet,	18,900	360
8/17/15	Settling basin effluent,	52	0
8/17/15	Hospital Run below outlet,	60	0
8/24/15	Settling basin effluent,	720	0
8/24/15	Hospital Run below outlet,	480	0
8/31/15	Settling basin effluent,	120	0
8/31/15	Hospital Run below outlet,	88	0

The sewage flows into a screen chamber alongside the pump house where vertical bar screens are provided and in one corner is an overflow connecting with a pipe leading to Hospital Run. This overflow is provided in case of failure of the pumps to operate. The crest of the overflow is about 6 inches above the normal water level in the screen chamber. A careful examination both at the overflow and at the mouth of the discharge pipe did not indicate that this had lately been in use, but there were evidences that the water level had been within three inches of the top of the overflow. There is a bare possibility that at some time sewage may have found its way into Hospital Run through the overflow, the discharge from which would be at a point nearly 1,000 feet distant from the sewage treatment works. The evidence is entirely inconclusive in this matter.

Prior to the outbreak of typhoid fever in the Institution and up to August 30, 1915, forty pounds of chlorinated lime were being used to dose the effluent from this plant in 24 hours. Beginning August 31st, this amount was increased to 50 pounds daily and was being continued at this rate at the end of the year. This step as well as the changes made at the water works station was taken on the advice of the State Department of Health.

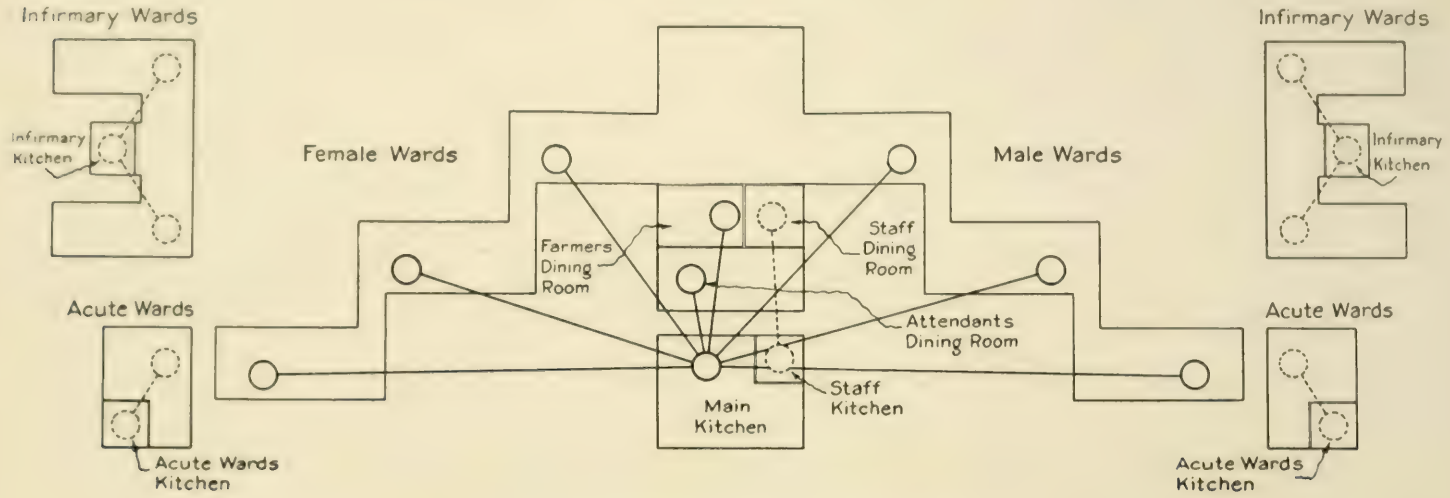
As set forth in this report, the medical officers' suspicion as to the cause of the typhoid fever cases in the Institution was directed more strongly to things other than the water supply. In fact the conclusions reached practically eliminate the water supply from among likely causes of the trouble, and the investigation carried on by the

Engineering Division failed to discover any conclusive proof that the water supply probably caused the outbreak. By this it is not meant to convey the idea that the water works at the Institution is ideal; in fact, plans for improvements of this plant were approved by the Department several years ago, but the work proposed thereby has not been effected because of failure of the State to supply the necessary funds. A step in the right direction has been made by the Institution authorities in their plans to provide increased pumping capacity for the filtered water, for which plans approval of the State Department of Health was asked on October 1, 1915. Two new pumps are to be installed each with a rated daily capacity of 1,400,000 gallons. Other improvements contemplated consist of the installation of the new fire system and repairs to the distributing reservoir. These plans were approved in a permit bearing date of November 17, 1915, and by the end of the year considerable work connected with the improvements had been done. Regarding the by-pass connection to the raw water main suction line, it is required that this shall be kept closed except in some great emergency, at which time the State Department of Health is to be immediately notified of the occurrence, and after the emergency has passed the entire water system shall be drained and all water taken from the system and used for domestic purposes prior to the resumption of the filtered water supply is to be boiled. In addition, provision must be made for the introduction of a suitable germicide into the raw water in case the need of forcing such water into the system arises. The plans contemplate installing two valves on the by-pass connection with a drip in between, and the Department has stipulated that this drip is to be kept open at all times except when the suction line is required by some emergency to be put into use.

It is recommended that the Institution authorities make another effort to obtain funds to carry out other needed improvements to the water works for which plans have already been approved and under contemplation for several years. Also, the matter of eliminating the overflow at the sewage screen chamber should be carefully considered, and if this is practicable its elimination should be carried out forthwith, thereby removing what might be considered a serious menace to the purity of the water supply used by Danville Borough, a short distance below.

The main building of the Asylum faces west and is constructed with a central portion and lateral wings, each wing being sub-divided into three portions which are attached to one another by closed corridors. In the central portion of the building are located the staff dining room, the attendants' dining room and the farmers' dining room. Each division of the lateral wings is occupied by a ward on each floor. There are four floors to the first portion of each of the

State Hospital for the Insane
Danville, Penna.
Diagram of Preparation and Distribution of Food



lateral wings and three floors to the other two portions of these wings. The male patients occupy the wards in the north wing and the female patients those in the south wing. In addition to the main building there are four others adjacent to but entirely detached from the main building. Two of these are for the accommodation of the male patients and the other two for the female patients. These buildings are designated by the terms infirmary wards and acute wards. There are other buildings connected with the hospital such as nurses' home, power plant, farm buildings, etc., which played no role in the epidemic about to be studied and, therefore, will not be described. It is essential to have clearly in mind the relationship one to another of the central group of buildings and to be familiar with some of the hospital routine.

Above all else a study of the preparation and distribution of food to patients and employes should clearly be understood. Every ward has its own separate dining room. The attendants and nurses from all the wards have a common dining room. The farmers and mechanics also have a separate dining room, as does the hospital staff. Just to the rear of the central portion of the main building in a separate division is the main kitchen. Here the food is prepared which supplies all the dining rooms in the wards of the main building, the attendants' and nurses' dining room and the farmers' and mechanics' dining room. The staff dining room is supplied by a separate kitchen located in one corner of the main kitchen, but is separate and distinct in its personnel. The ward dining rooms in the infirmary and acute wards are supplied by individual kitchens in each of these buildings. It is to be noted, however, that the attendants in the infirmary and acute wards eat in the general attendants' dining room. It is evident then that from one source, that is the main kitchen, food is distributed to all the dining rooms in the wards of the main building, the attendants' dining room and the farmers' dining room, and that separate and distinct kitchens supply the staff dining room, the infirmary and acute ward dining room.

The sanitary conditions in and about the kitchen and various dining rooms were carefully gone over. All the utensils for cooking and serving food were clean. The kitchen help, cooks, waiters, etc., were clean, but were not uniformed. The kitchen staff for the most part had definite duties assigned them, but in reality there was considerable overlapping of the functions of these various individuals. The assistant chef looked after the carving of all meats and he was the only individual who came in direct contact with the meat from the time it left the ovens until it reached the dining room. The vegetables and fruits were prepared for cooking by certain of the capable patients. After the food was cooked it was distributed in closed tin boxes to the various dining rooms, where the attendants or

nurses took charge of it. For the most part the patients ate in the ward dining rooms at long tables.

Milk was widely used and formed an important part of the patients' diet. The milk was procured by the hospital from various sources. The hospital farm supplied almost the entire amount used in the infirmary and acute wards, but usually this supply had to be pieced out by milk obtained from other sources. The milk obtained from dairy farms in the neighborhood was delivered to the hospital in the dairyman's cans. It was immediately dumped into large vessels so that it was impossible to trace the milk from any particular dairy farm to any particular patient or patients. The food remnants from the dining rooms were collected in barrels and ultimately disposed of in an incinerator.

All the dishes used in any particular ward were washed and retained in that ward; only the large tin distributing boxes went to and from the kitchen and dining rooms. It was noted while making the sanitary survey that flies were prevalent in the kitchen and dining rooms. Screens were not used anywhere in the Institution at this time, although subsequently the main kitchen was efficiently screened. The sanitary conditions in and about the refrigerator were satisfactory except that the woodwork in one of the walls of the refrigerator had rotted and just prior to the epidemic had to be replaced.

The Epidemiological Study.

Distribution. The first case sickened on August 1st. During the next twenty days eight other individuals fell ill. After the 20th of August there was a rapid increase in the number of onsets, which did not abate until the 10th of September. From the later date the onsets were fewer in numbers and less close to one another in point of time. The last two cases developed the disease on the 28th of September.

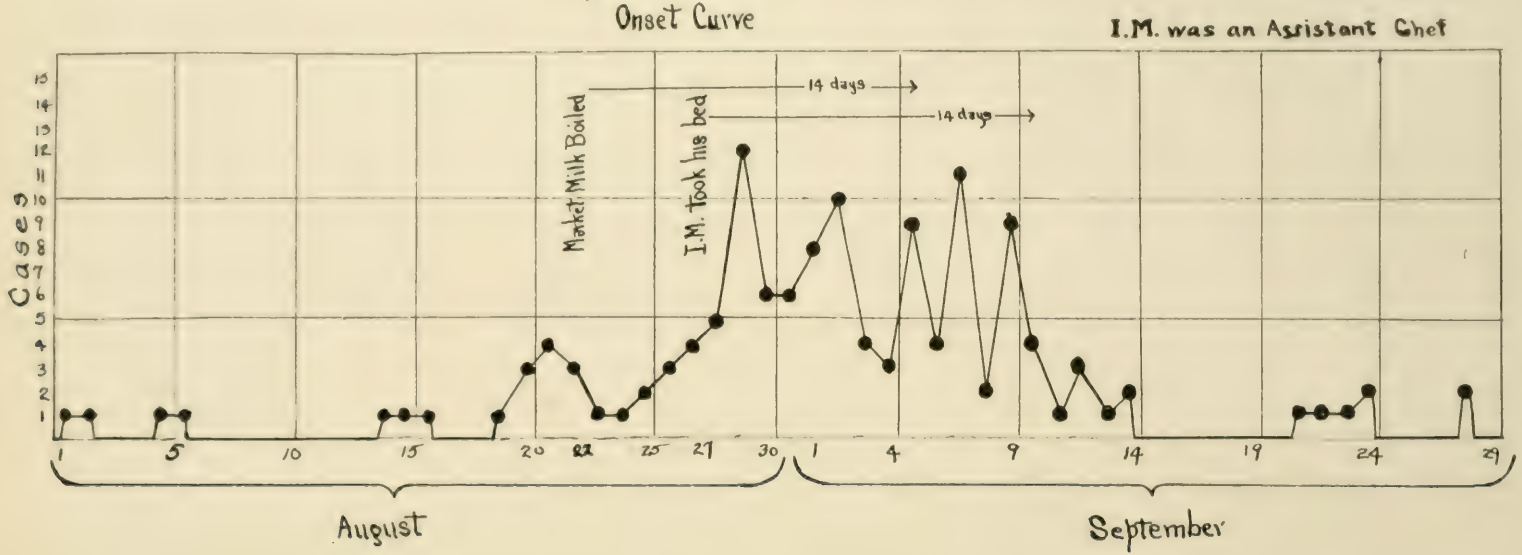
Onsets.	Cases.	Onsets.	Cases.	Onsets.	Cases.
Aug. 1,	1	Aug. 26,	3	Sept. 9,	8
Aug. 2,	1	Aug. 27,	4	Sept. 10,	4
Aug. 5,	1	Aug. 28,	5	Sept. 11,	1
Aug. 6,	1	Aug. 29,	12	Sept. 12,	3
Aug. 14,	1	Aug. 30,	6	Sept. 13,	1
Aug. 15,	1	Aug. 31,	6	Sept. 14,	2
Aug. 16,	1	Sept. 1,	8	Sept. 21,	1
Aug. 19,	1	Sept. 2,	10	Sept. 22,	1
Aug. 20,	3	Sept. 3,	4	Sept. 23,	1
Aug. 21,	4	Sept. 4,	3	Sept. 24,	2
Aug. 22,	3	Sept. 5,	9	Sept. 28,	2
Aug. 23,	1	Sept. 6,	4		
Aug. 24,	1	Sept. 7,	11		
Aug. 25,	2	Sept. 8,	2	Total,	135

The accompanying chart pictures the onset curve, and shows in addition the relationship of certain important events to this curve.

State Hospital for the Insane, Danville, Penna

Typhoid Fever - 1915

Onset Curve



The distribution of cases among the various wards and groups of employes is tabulated below:

Ward.	Male. Number Inmates.	Male. Number Typhoids.	Ward.	Female. Number Inmates.	Female. Number Typhoids.
No. 1.	40	2	A.	29	7
No. 2.	42	3	B.	43	11
No. 3.	41	1	C.	33	12
No. 4.	34	1	D.	47	6
No. 5.	41	6	E.	41	4
No. 6.	56	3	F.	51	2
No. 7.	50	2	G.	43	8
No. 8.	57	5	H.	58	2
No. 9.	44	5	J.	59	4
No. 10.	51	2	K.	64	5
No. 11.	46	4	Inf. A.	33	0
Inf., 1.	71	6	Inf. B.	32	0
Inf. 2.	65	0	Inf. C.	28	0
Inf. 3.	50	1	Inf. D.	30	0
Inf. 4.	52	2	Inf. E.	17	0
Acute 1.	58	0	Acute A.	60	0
Acute 2.	66	0	Acute B.	53	0
Kitchen help.	9	2	Laundry help.	16	1
Mechanics and farmers.	48	0	Kitchen help.	21	2
Barber.	1	1	Physicians.	1	0
Physicians.	6	1	Nurses.	78	6
Attendants.	94	12			
Laundry help.	2	0			
Total.	1,024	65	Total.	849	70

Occupation.	Number of Cases.
Insane patients.	104
Physicians.	1
Nurses and attendants.	18
Farmers and mechanics.	6
Barber.	1
Kitchen help.	4
Laundry help.	1
	135

A comparison of the morbidity rate of the insane patients with that of the employes is interesting. There were one hundred and four insane patients who developed the disease in a total of nine hundred and ninety-four subjected to the infection, which gave a morbidity of 10.46%; and thirty-one or 11.52% of the two hundred and sixty-nine employes fell ill with the disease.

AGE AND SEX INCIDENCE.

Age.	Males.	Females.	Total.	Total Inmates.	Total Employes.
15-19 years,	2	4	6	3	3
20-24 years,	18	6	24	11	13
25-29 years,	9	5	14	7	7
30-34 years,	5	9	14	14	0
35-39 years,	5	8	13	10	3
40-44 years,	9	8	17	15	2
45-49 years,	7	6	13	12	1
50-54 years,	1	6	7	6	1
55-59 years,	4	5	9	8	1
60-64 years,	4	5	9	9	0
65-69 years,	0	4	4	4	0
70-74 years,	1	1	2	2	0
75-79 years,	0	3	3	3	0
Total,	65	70	135	104	31

In an institution where practically all the inmates and employes were over fifteen years of age, it was to be expected that the age incidence would be high. Forty-four or 32.59% of the cases were between fifteen and thiry years; forty-four or 32.59% were between thirty and forty-five years; and the remainder or 34.82% were over forty-five years of age.

The cases were almost equally divided between the two sexes.

Neither the age or sex incidence gives any aid in establishing an epidemiological diagnosis.

Methods of Transmission. No evidence could be found which pointed to shell-fish or ice cream as the agent of transmission.

Water. In this report the Division of Sanitary Engineering prepared the foregoing detailed description of the water works. It will suffice here to state that no evidence was obtained to prove that the water used at the hospital was polluted. Many bacteriological examinations were made, but on no occasion was any evidence of contamination found. The hypho-chlorite of lime was increased on August 19th from sixteen pounds to twenty-four pounds per 1,000,000 gallons of water; a further increase to thirty-six pounds was made on August 27th. The inmates and employes in all the divisions of the hospital drank water from the same source. As will subsequently be shown, certain divisions remained free from the infection. If water had been the agent of transmission it would have been logical to find a more general distribution of the cases through the various hospital divisions and sickening en masse. It seems justifiable therefore to exclude water as the probable source of the infection.

Milk. The State Hospital farm produces about six hundred quarts of milk daily which is used to supply the infirmary and acute wards, but as noted above this supply is insufficient and has to be pieced out by the market milk. Mr. V. V. supplies about six hundred quarts to the institution daily. This milk is obtained from nine auxiliary

sources. Each of the nine dairy farms was carefully inspected and a history of illness sought for in all the milk handlers. Suspicion was aroused in five instances, and the milk discontinued immediately. Most careful investigation of the five failed to reveal any possibility of contamination by B. Typhosus. Certain insanitary conditions were found at these dairy farms, but these could have no relationship to the typoid fever at the hospital. The milk was delivered to the institution direct from the farms. On arrival it was dumped into large containers used for that purpose alone; by this process the milk became so mixed that it was impossible to trace the product of any particular farm to any particular ward or patient. The duty of receiving the milk, dumping it into containers and placing them in the refrigerator was delegated to one particular person who chanced to be a woman. Since the work was laborious, it frequently happened that others in the kitchen assisted her in this work. The milk as indicated above was distributed to all the divisions of the hospital, but the infirmary and acute wards received only a small portion of it. On the 22nd of August an order went into effect whereby all the market milk was boiled. It should be noted that two weeks later, September 4th, there was no let up in the number of onsets. Since the average period of incubation of typhoid fever is fourteen days, we would expect a very appreciable drop in the onset curve about September 4th if the infection had been conveyed by milk. In those divisions of the institution where the hospital farm milk was used there was practically no typhoid; the milk from the hospital farm was never boiled. We may reasonably conclude that milk infected outside of the institution was not the agent transmitting the infection.

Food. All articles of food cooked in the main kitchen had a definitely limited range of distribution. As noted elsewhere it went to all wards in the main building, the attendants' dining room and the farmers' and mechanics' dining room. This is the precise range of distribution of the typhoid with the exception of three cases which occurred in the male infirmary wards and one case from the staff dining room. Each of the three did considerable work about the institution and was privileged therefore to receive food from the attendants' dining room at not infrequent intervals. The physician who succumbed to the disease ate in the staff dining room, but was in the habit of getting a "bite to eat" in the attendants' dining room quite often; in this way he could get through his lunch earlier and attend to certain outside duties which pressed him for time. It is clear therefore that every case which developed typhoid fever had partaken of food cooked in the main kitchen and no case occurred in which this relationship did not exist.

Flies. Flies were prevalent in the main kitchen and must be considered as a possible mode of transmisson. It wll be recalled that

the staff kitchen occupies one corner of the main kitchen and is not partitioned from the remainder of the room. Assuming that flies did carry the infection to food, it is reasonable to suppose that the food prepared in the staff kitchen would be subjected to fly contamination quite as much as the food in the main kitchen, and that cases of fever would develop in those who ate in the staff dining room as well as in those eating in the ward dining rooms. Those who ate in the staff dining room alone did not develop the disease; therefore it seems rational to exclude flies as the method of transmission.

Epidemiological Diagnosis. The epidemiological diagnosis is based on the foregoing facts. The only avenue of transmission which can not reasonably be ruled out is that of food. The manner in which the food became infected is more difficult of solution and indeed can only be strongly suspicioned, not definitely proven. The assistant chef, I. M., had sole charge of carving and distributing all meats prepared in the main kitchen. He gave a history of illness extending over several weeks, characterized by malaise, pain in the side, constipation and cough. Under medical treatment he improved somewhat, but did not get entirely well. This illness began during a hot spell early in July and continued until he took to his bed on August 27th with a frank case of typhoid fever. I. M. was a very frequent bather in the Susquehanna River. On September 10th, just two weeks after I. M. ceased to handle the meats in the main kitchen, there was a decided fall in the onset curve, and shortly the epidemic was spent. Strong suspicion centered on I. M.; it was felt that he was probably a typhoid carrier with an ambulant type of disease and had infected the meats which he carved. Specimens of his stools and urine were sent to the State Department of Health Laboratory in order to determine the presence or absence of B. Typhosus. The results were negative. In spite of this, suspicion is still strong and is not precluded by the single laboratory report. Further reports were not made because he was passing through an illness not inconsistent with that of relapsing typhoid infection.

Clinical Study of the Cases. It was stated above that the morbidity rate amongst the hospital employes was 11.52% and that amongst the inmates was 10.46%. This is an interestnig observation, since it might be expected that the employes living in a better state of health would be less likely to fall victim to the disease; the reverse being true, it serves to impress the fact that B. Typhosus is no respecter of persons.

A summary of the data of a clinical nature is tabulated below:

Duration of Disease.

Under 2 weeks,	21	or 15.5 %
2-4 weeks,	63	or 46.6 %
4-8 weeks,	46	or 34.0 %
Over 8 weeks,	5	or 3.7 %
	135	

Complications.

Relapse,	5	or 3.7 %
Perforation,	4	or 2.96%
Hemorrhage,	24	or 17.7 %
None,	102	or 75.5 %
	135	

Clinical Types.

Mild,	57	or 42.2 %
Severe,	58	or 42.9 %
Fatal,	20	or 14.8 %
	135	

Most noteworthy of all these facts is the unusually large number of complications due to hemorrhage. In most epidemics three to seven per cent. of the cases have hemorrhages; 17.7% then is an extremely large ratio.

The mortality rate is above the average and requires further study: it is subdivided so as to bring to light any factor which may of itself cause the increase in the rate.

	Mortality.
Nine male inmates in 43 died,	20.0 %
Seven female inmates in 61 died,	11.4 %
Three male employes in 22 died,	13.6 %
One female employe in 9 died,	11.1 %
Sixteen inmates in 104 died,	15.38%
Four employes in 31 died,	12.9 %

It is obvious that the male inmates were chiefly responsible for raising the death rate. No explanation can be given for this. However, the statistics of the Institution, compiled from its establishment to the end of 1914, show that a great preponderance of deaths recorded from apoplexy, organic disease of the heart and paretic dementia were amongst the male inmates by ratio of three males to one female. It may be that these same diseases were playing their role in increasing the male death rate in this epidemic. The lower mortality of the

employes, despite the greater morbidity rate, shows that in reality this group of individuals was perhaps either more resistant to the infection than the insane patients, or because of their lower age average and more frequent outdoor exercise were better enabled to fight it.

Treatment. The measures adopted to check the further spread of typhoid fever in the hospital have already been mentioned. Both the water and the milk received attention from the hospital authorities when they realized that the disease was spreading. The amount of hypo-chlorite of lime added to the water was more than doubled by the 27th of August. All the market milk was bottled before being given to the inmates; this procedure began on August 22nd. Those who developed typhoid were transferred to the infirmary wards, thus effectually isolating them from the remainder of the inmates. Special nurses were detailed to look after these patients. The bedding and clothes from these wards were thoroughly disinfected before being sent to the laundry, and after reaching there they were placed in an autoclave and sterilized with steam under pressure. The dishes were boiled and the food remnants were incinerated. The stools, urine and bath water were disinfected before being emptied into the sewers. In order to prevent the possibility of any living organism reaching the Susquehanna River, the dose of hypo-chlorite of lime given the effluent from the sewage disposal plant was increased on August 31st from forty pounds to fifty pounds per 1,000,000 gallons.

As a means of controlling the spread of typhoid fever in the Institution, the prophylactic use of anti-typhoid vaccine was introduced. The results of the vaccinations are summarized in the table below. It should be noted that the first inoculations were made about September 1st, or at the period when the epidemic had reached its acme. The second and third doses were administered at ten-day intervals.

TYPHOID VACCINATION.

	Male.		Female.		Total.	
	Number.	Deaths.	Number.	Deaths.	Number.	Deaths.
Inmates and employes in hospital,	1,024	.....	849	.....	1,873	.....
Total cases of typhoid,	65	13	70	8	135	21
Cases developing without vaccination,	31	5	25	3	56	8
Cases developing after one inoculation,	26	6	34	5	60	11
Cases developing after two inoculations,	8	1	7	0	15	1
Cases developing after three inoculations,	.....	.....	4	0	4	0

The mortality among the seventy-nine cases which had received one or more injections of vaccine was twelve or 15.1%, while among the fifty-six cases which had not been vaccinated only eight or 14.3% died.

THE EPIDEMIC IN THE TOWN OF DANVILLE.

The possible relationship of this institution epidemic with that of the town of Danville makes it desirable to treat the two epidemics in a single discussion, particularly as the investigations were carried out by the same individuals and consecutively in the matter of time.

Between August 11, 1915, and October 21, 1915, one hundred and twenty-five cases of typhoid fever occurred, in each case a connection being traced to the borough of Danville. In point of residence, 93 of the cases resided in Danville, 8 in Mahoning Township in the vicinity of the borough, 20 in South Danville across the river from Danville, and the remaining 4 cases were widely distributed in various parts of the State. Practically at the same time as the outbreak occurred in Danville, was the epidemic of typhoid fever totaling 135 cases in the State Hospital, just described.

Danville, the county seat of Montour County, lies on the north bank of the North Branch of the Susquehanna River, ten miles above the junction of this branch with the West Branch to form the main stream. It is a thriving industrial community of about 8,000 population, the chief industries being those connected with the iron and steel business. For the last two decades the town has been about at a standstill so far as population is concerned. Opposite to the borough on the south bank of the river, in Northumberland County, is a community comprising the borough of Riverside and adjacent thereto, in Gearhart township, a village known as South Danville. Locally the entire community is called South Danville. Between here and Danville communication is had by way of a highway bridge, and many of the inhabitants of South Danville find occupation in Danville. The two virtually make up one community, and many of the South Danville citizens visit the borough on the opposite side of the river daily for various reasons.

Up-stream about one and one-half miles above Danville, in Mahoning Township, is the State Hospital for the Insane. Here there is a total population of approximately 1,900. This institution is distinct from the borough, although some of the attendants make their residence in Danville. It has its own water works and sewage treatment plant. The source of supply is the river, and the effluent from the disposal works finds its way into this stream approximately one and one-half miles above the intake of the municipal water works in Danville. Danville has a frontage on the river of approximately one and one-quarter miles, the town being about 30 feet above the low water stage of the stream. Drainage is either direct to the river or it reaches this stream by way of Mahoning Creek, which drains the western end of the town and enters the river about three-quarters of a mile below the highway bridge crossing to South Danville. There is a small stream known as Sechler Run, which flows in a general northwesterly direction about through the center of the town to Mahoning Creek.

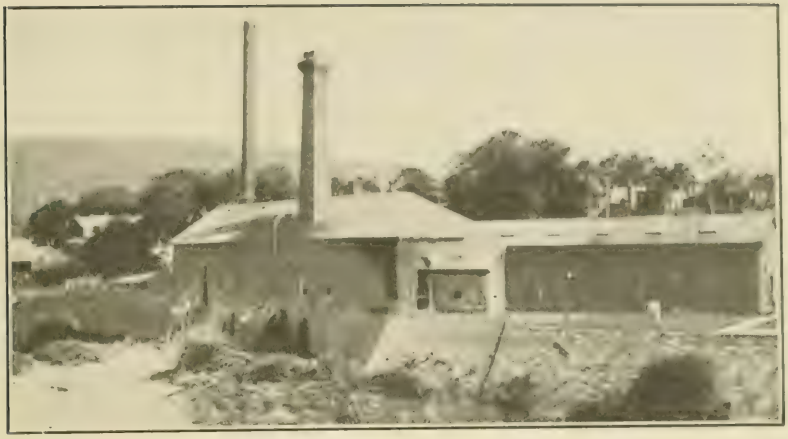
This stream divides Danville into a northern and a southern section, the latter lying directly along the river and the northern section back from the river about one-half mile. This also practically marks the ward division lines, the first and second wards making up the southern section of the town along the river and the third and fourth wards being found in the northern section. According to the 1910 Federal census, the first and second wards had a total population of 3,360 and the third and fourth wards combined had a total population of 4,157. In the first and third wards are to be found the chief commercial establishments of the borough. The second and fourth wards are principally residential. The citizens of Danville are practically all supplied with water through a municipal water works first established about 1872. In certain sections of the town shallow drilled wells are in use furnishing private families or in some instances constituting a small neighborhood supply. The wells most used are in the first and second wards near the river and are said to be in a limestone formation underlying this section.

Water Works.

The river is the source of supply for the municipal water works, and a pumping station and filtration plant is located at the edge of the town on the north bank of the river just below the highway bridge crossing to South Danville. This water is not piped across the river into South Danville and this service is entirely in the borough except in a very minor way where a few consumers in Mahoning Township outside of the borough are supplied.

The pumping station and filter plant are housed in a substantial brick structure divided into three sections, the farthest down-stream contains the boiler equipment and that farthest up-stream the filtration plant, the middle section being the pump room and also containing the power plant of the municipal electric light works. A retaining wall protects the building from high water, the bank here being about 30 feet high.

Out in the river opposite the filter house are two cribs or so-called wells. One is directly at the low water mark and the other 60 feet farther out into the stream. Each crib is approximately 50 feet long, 7½ feet wide and 11 feet deep, the bottom being open, the structures being metal boxes. Presumably the sides and top of the crib are designed to be tight and the water is supposed to be drawn from the bed of the river through the open bottom of the crib, but there is reason to doubt this. Except during periods of excessively low water the river overflows the cribs and the probabilities are that the raw river water is taken into them through open seams in the top. The crib along the shore line constitutes the pump well to which the suction lines from the pumps extend. Connecting this crib with the



Pumping Station and Water Filteration Plant
Danville Water Works.



Sedimentation Basin
Danville Water Works.

one farther out in the stream is a 12-inch pipe, and there is also an 18-inch pipe extending from this pump well about 200 feet out in the river. Each of these connections is valved so that the supply can be taken from the pump well alone, but there is no alternative scheme for obtaining the water directly from the other crib or the intake pipe, as all this must pass through the pump well.

From the pump well there are two 16-inch pump suction pipes leading into the pump house, each one supplying a separate raw water pump. There is no connection between the two lines, but to each of these suction lines there is a connection to one of the two filtered water pumps which supply the distribution system. These are emergency connections and are valved, the valves being kept locked in accordance with a stipulation of the State Department of Health. The floor of the boiler house and the power plant is at the street level with the floor of the pump room 14 feet 7 inches below. The distance from the pump deck to the low stage of the river is 18 feet. The bottom of the clear water well under the filters is approximately at the same elevation as the pump room floor, and the pumps supplying filtered water consequently work under pressure. Should the valves on the by-pass between the raw water suction mains and the filtered water pump leak, these pumps in order to obtain the unfiltered river water would be obliged to overcome the suction lift of about 18 feet, while on the other hand there is always a pressure of filtered water against them from the clear water well. Therefore, the possibilities are slight of unfiltered river water reaching the filtered water pumps as long as these by-pass connection valves are kept closed, and provided that a supply of filtered water is available.

All of the pumps are of the horizontal, duplex, double acting type. Each of the two raw water pumps has a rated capacity of 2,000,000 gallons per 24 hours and each of the high pressure or filtered water pumps has a rated capacity of 3,000,000 gallons per 24 hours. They are operated, however, only at sufficient speed to supply the consumers, an automatic governor regulating the operation, a pressure of 80 pounds being maintained on the distribution system. The only storage of water provided is that in the clear water basin underneath the filters, this amounting to approximately 100,000 gallons.

On the opposide side of the street from the pump station is a reinforced concrete sedimentation basin having a capacity of 250,000 gallons. The discharge pipes from the raw water pumps unite in a common 16-inch main leading across the road to this basin. Just outside the pump station a Venturi meter is placed in this line, connected with which is an automatic device governing the flow of a solution of sulphate of alumina introduced into the water as it passes to the sedimentation basin. The water is delivered at one end of the sedimentation basin through four 6-inch risers extending above the

top of the basin and discharging the water onto a splash board. It passes through the basin under and over baffles and leaves through a manifold of four 6-inch pipes with the inlet ends 3 feet 6 inches below the normal water line in the basin. These merge into a 12-inch line which connects outside the basin with a 16-inch delivery main that crosses the street and joins the 16-inch header in the filter house that supplies the filters with settled water. A drain is provided at the sedimentation basin for use in cleaning out this structure. This discharges into the river below the water works.

There are three filter tubs placed in the filter house on I-beams over the top of the clear water basin. Each filter is 12 feet in diameter and is equipped with a loss of head gage and a rate controller. Each filter has an effective area of 113 square feet or a capacity of 300,000 gallons in 24 hours when operating at the rate of 125,000,000 gallons per acre per day. The filters are of the double compartment tub type and each one contains 36 inches of sand and gravel placed over a manifold collecting system built in the bottom of the tub. When in operation there is 5 feet of water over the sand. Each filter is equipped with an 8-inch supply pipe connecting with the supply header with a 6-inch filtered water delivery pipe extending down underneath into the clear water well and with wash water pipe and a drain leading to the sewer discharging into the river. Wash water is supplied from the clear water well and is furnished to the filters by a rotary pump having a capacity of 1,700 gallons per minute.

The operating platform is along the river side of the building and from this point all valves are operated and here simple tests are made by the operators to determine the turbidity and alkalinity of the water. Directly underneath this platform is the pipe gallery and access to the pipes is had by way of a loose plank walk laid on the I-beams over the clear water well which is not covered with a tight floor except at the entrance end of the filter house. This makes it possible for dirt blowing into the filter house through the open windows or being carried in on the shoes of the attendants to find its way into the filtered water in the clear water well underneath.

At the entrance end of the filter house on a platform slightly above the operating platform is the chemical room, and here is installed apparatus for mixing and dosing the water with sulphate of alumina, chlorinated lime and such other chemicals as are deemed necessary. As previously stated, the coagulant enters the raw water on its way to the sedimentation basin. The chlorinated lime solution is discharged by way of an orifice box through a pipe at a point in the clear water well directly over the inlet end of the supply pipe leading to the filtered water pumps. This consequently enters the filtered water at the outlet end of the clear water basin. Additional pipes

are carried from the chlorinated lime dosing apparatus to each of the emergency by-pass connections on the suction lines for use in case it ever becomes necessary to pump the raw river water into the distribution mains. This precaution was insisted upon by the State Department of Health before the emergency by-pass connections were permitted to remain. The flow of the chlorinated lime from the orifice box is regulated by hand and is entirely dependent upon the faithfulness and judgment of the filter operator.

The 10-inch supply pipe to the high pressure pumps leaves the clear water well at a point near the bottom. There is no clean-out pipe for this well, and in cleansing it heretofore the water was drawn down as low as possible and the residue pumped from the clear water well by a portable pump, in the meantime the town being without a water supply.

Each filter has a normal capacity of 300,000 gallons in 24 hours. The average daily consumption is 750,000 gallons, but this varies considerably on different days, and at times the consumption is considerably in excess of the capacity of the filters at the normal filtering rate. This fluctuation is taken care of to some extent by the storage in the clear water basin, but at best there is only a narrow margin. Ordinarily the filters are washed once daily, which means that during certain periods of the day the supply must be maintained by two filter units, and in addition water must be available for washing the filters.

The distribution system covers practically the entire borough, and through it water is furnished to nearly all of the inhabitants of the town, there being a few wells and springs that have some local use. It is also furnished for fire purposes. In the mills it is used for drinking purposes, but only in a minor way for industrial purposes, these establishments having their own supply that is used for inferior purposes. There are at least 16 dead ends on the system, and in only 4 instances are blow-offs provided except such as are furnished through the fire hydrants. Three of these blow-offs are available for use in draining the system in the northern part of the town, while in the southern or main section of the town there is only one device of this kind and this is more or less of a makeshift.

The river above Danville receives untreated sewage from numerous municipalities both near and distant. It also receives, at a point one and one-half miles above the water works intake, the flow from Hospital Run, which includes the effluent from the sewage treatment works at the State Hospital for the Insane in Mahoning Township up-stream from the borough.

The method of disposing of the hospital sewage prior to 1908, much of it going into the river without any treatment, was determined to be a menance prejudicial to public health by this Department, and,

subsequently, the sewage treatment plant was installed, comprising sedimentation tanks, a sprinkling filter, final settling basin, a sludge bed and chemical disinfection of the effluent. The plant was designed and has been operated under the approval of the State Department of Health with the object of protecting the municipal water supply. Samples for bacteriological examination are collected and sent to the Department Laboratories every week.

On October 19, 1910, the borough authorities were advised that the water filter plant needed a complete overhauling. After a delay of two years, the borough submitted plans for the intake pipe already described, extending out into the stream. The scheme was approved, but, in addition, the borough was required to submit plans for a sedimentation basin and modern equipment of the filters and these improvements have already been described. Moreover, the Board of Water Commissioners employed a firm of consulting engineers to supervise the application of the water works and a representative of the firm visits Danville at least monthly.

Samples of the public water supply for bacteriological examination were collected by the Department representatives during the investigation of the typhoid fever epidemic. These were taken at the filter plant and included the raw river water, the applied water and the filtered water under various conditions. Samples were also secured from any points throughout the town, both from taps in private households and in public places, from blow-offs and from fire hydrants, a large number of which were opened on different days. The results of such analyses showed the presence of sewage organisms in the raw water, in the applied water, in some instances in the filtered water taken from the clear water basin, and the filtered water from the distribution mains as served to consumers.

Sewerage.

Danville has a municipal sewer system built partly on the combined plan, serving most of the built-up portion of the borough and discharging into the river through a single outlet near the lower end of the borough several hundred feet below the water works intake. There have been approved by the State authorities plans for a comprehensive sanitary sewer system and sewage treatment works by which it was proposed to incorporate part of the existing system into the new sanitary system. So far, apparently, little work along this line has been done. In 1914 a test was made of the flow from the sewer system by which it was ascertained that there is a very large amount of infiltration into this system. The total flow to the river is estimated to be in the neighborhood of five million gallons daily. Some of the trunk sewers are laid in or near streams of water, and

DIAGRAM SHOWING

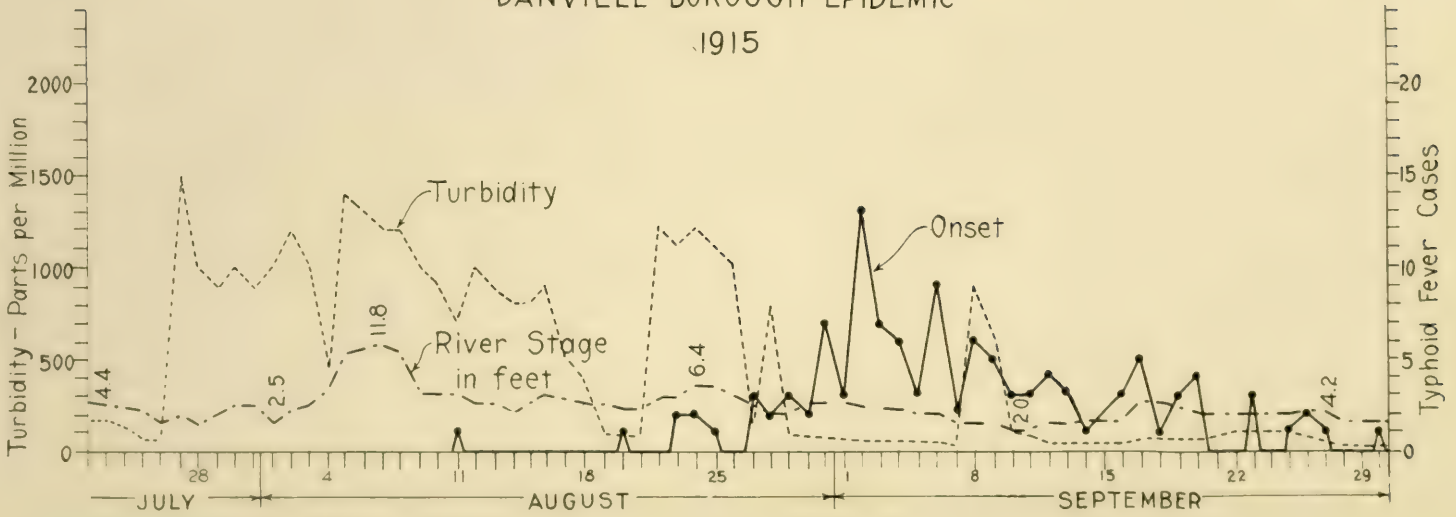
RIVER STAGES AND TURBIDITIES OF RAW WATER

AND

TYPHOID FEVER CASES BY DATE OF ONSET

DANVILLE BOROUGH EPIDEMIC

1915



along such lines and also at stream crossings the principal infiltration occurs. Nothing whatever has been done by the borough in the way of constructing a sewage treatment works.

Typhoid Fever.

The records of reports to the State Department of Health of typhoid fever cases in Danville for the past ten years are as follows:

Year.	Number of Cases.	Year.	Number of Cases.
1906,	38	1911,	44
1907,	70	1912,	39
1908,	38	1913,	16
1909,	24	1914,	24
1910,	24	1915,	92

The figures show that typhoid fever has been practically endemic in Danville and the water supply has long been viewed with suspicion. The makeshift alterations of the equipment of the old filters at the time of installing the new sedimentation basin were not followed by a material reduction in the typhoid rate.

During July and August there had been typhoid fever in a number of towns from which sewage reaches the river above Danville. From the records kept of the daily operation of the filter plant and from the Department's census of the typhoid fever cases, the accompanying diagram has been prepared showing the relation between the occurrence of the typhoid fever cases in Danville and the changes in the turbidity of the water in the river and of its stage. Except for a single advance case, the first outbreak of the epidemic occurred between two and three weeks after a rise in the river which followed suddenly upon a period of low water and reached a height unusual for the time of the year. Such an occurrence would naturally carry past the Danville intake the concentrated accumulations which had settled out along the river bed during the period of low water. The turbidity of the river was high before, during and after the rises.

It is possible that the epidemic of typhoid fever of 135 cases from August 1 to September 28, at the State Hospital just above Danville, may have had some bearing upon the outbreak in the borough. However, it must be remembered that it was to protect especially the Danville water supply as well as other water supplies from the river down-stream that the old method of sewage disposal at the hospital was condemned by the State authorities and the present sewage treatment plant installed. During several weeks prior to the outbreak of typhoid fever in the borough the results obtained in the examination by the Department Laboratories of samples of the effluent from

the State Hospital sewage treatment plant indicated that it was being well maintained. The weekly examinations of such samples is a routine procedure. Upon the appearance of typhoid fever at the hospital the quantity of chemical germicide added as the last step in the purification of the sewage was materially increased.

Normally, the water supplied to consumers is clear, but inquiry elicited the information that roily water had been noticed on wash days, when, of course, the consumption is particularly heavy and the filter plant is operating at a high rate. When the fire hydrants were flushed during the investigation turbid water was obtained almost without exception. The system had not been flushed for several months prior to the epidemic. Considerable sediment was found in the sedimentation basin.

Precautionary Measures.

The municipalities down-stream using the river water as a source of public water supply were notified of the presence of an epidemic of typhoid fever both in Danville and at the State Hospital for the Insane and advised to exercise unusual vigilance to prevent the entrance of infection into their water works.

Under the supervision of the Department officers, dosing apparatus was installed on the borough sewer system by means of which a solution of chlorinated lime was continuously fed into the sewage of the borough before it was discharged into the river. The first installation of this nature comprised two dosing tanks which were placed at the last manhole along the outfall sewer about 700 feet back from the mouth. This was started at 3 P. M., September 13, 1915, and dosing was given the sewage at a nominal rate of ten parts of chlorinated lime per million gallons of the dry weather flow of sewage in 24 hours. The borough provided a caretaker to look after this plant. A week later the location of this apparatus was changed to a manhole farther back on the system. This was on a trunk line sewer through which flows the greater part of the sewage of the borough. The change was made because of an excess amount of unfiltered water passing the manhole where the first plant was established and by moving the plant to the other location the disinfection was accomplished before the dilution of the sewage. In addition, a similar plant was established on another sewer line, the sewage in which could not be treated by the main plant. Both of these were put into operation on September 20, 1915, and continued until the close of the year, at which time the epidemic had abated.

On September 17, 1915, the town was placarded with notices advising the public to boil all water used for domestic purposes. These were regulation notices of the State Department of Health and were supplemented by others issued by the Board of Water Commissioners. At the same time similar notices appeared in the daily newspapers.

Prior to the epidemic seven pounds of chlorinated lime were being used daily for dosing the filtered water. This same rate was in force until September 1, when the dose was increased one-half pound, followed by additional half-pound increases on the next two days, and on the fourth day the dose was increased to ten pounds, two days later being increased to 12 pounds, which rate was maintained until September 26, beginning with which date 14 pounds of chlorinated lime in 24 hours were used, this rate still being maintained at the end of the year.

On September 30, on the advice of the State Department of Health, the Water Commissioners started to use copper sulphate as an extra precautionary measure, since even with the increased dose of chlorinated lime the health authorities did not feel certain that a complete barrier had been established between the polluted river water and the consumer. On September 30 the dosing was started, using seven pounds of copper sulphate in 24 hours, and this was introduced into the raw water near the point where the sulphate of alumina enters the raw water, that is, prior to its entrance into the sedimentation basin. This rate of dosing was still being maintained at the end of the year. The amount of sulphate of alumina used varies according to the turbidity of the raw water from 50 to as high as 300 pounds daily.

At the same time as these precautions were being taken in connection with the borough plant, the dose of disinfectant in the effluent of the sewage treatment works at the State Hospital for the Insane was materially increased as an additional safeguard.

The attention of the Board of Water Commissioners was called to the inadequacy of filtration and storage capacity at this plant. This resulted in preparations to install an additional filter unit, and plans were prepared and submitted to the State Department of Health for approval on December 6, 1915, the proposed unit to have a capacity of 320,000 gallons per day, which would increase the total capacity of the plant about 1,250,000 gallons in 24 hours. These plans were approved on December 23, 1915, in a permit which, among other things, stipulated that extreme vigilance should be observed to prevent contamination of the filtered water in the clear water basin during the construction work, one of the precautions to be observed at this time being the continuous use of proper disinfectants. It was, moreover, the Department's understanding that the existing filter units are to be progressively replaced with units of a similar design to the one for which the plans were approved, including a permanent water-tight concrete covering over the entire clear water well. The borough was urged to carry out this work at the earliest possible date, and pending such substitution it was required forthwith to cover the clear water well with a tight floor of temporary construction to pre-

vent the possibility of the entrance of contaminating matter into the well. The borough was further required to prepare plans showing the means to be employed in cleaning the clear water basin. Also it was stipulated that a more systematic method of flushing the distribution system than was being employed was to be put into effect, and plans were required for arrangements of ample capacity for quickly draining the entire distribution system, it being advised that a thorough flushing of the system should be accomplished at least three times each year. An investigation was ordered to be made by the borough having as its object the elimination of all dead ends on the distribution system, and where this was found impracticable, then a blow-off of approved design was to be installed on such line.

The borough was ordered to prepare plans showing improvements to be effected for a more exact method of adding the disinfectant to the filtered water, and the borough was, moreover, ordered to make preparations to install additional storage capacity at the earliest practicable date.

On several occasions during the course of the epidemic, fire hydrants and blow-offs were opened over the distribution system, in this manner flushing portions of the system. However, on September 18, 1915, beginning at midnight the entire distribution system was as thoroughly drained as was practicable with the facilities at hand. This was accomplished by shutting off various sections of the town and allowing all the water in the pipes to drain therefrom at a low point. Also on September 28, 1915, the sedimentation basin was thoroughly cleaned. There was a deposit of mud on the bottom averaging two feet in depth. The sides and floor of the basin were thoroughly flushed out with filtered water that had been liberally dosed with a disinfectant. While the epidemic was on, along with the samples collected from the public water works, other samples from wells and springs about the town were secured and analyzed by the Department. Where evidence of sewage contamination in wells and springs about town was discovered, the owners were notified, and instructions were given for either cleaning or closing such sources of supply, and in the case of two springs that were of a semi-public character, placards warning against the use of this water were posted at the springs in question.

In South Danville the water supply comes almost entirely from dug and artesian wells. For household purposes the Danville water is never used, but because of the free communications between South Danville and Danville the inhabitants of the former frequently have occasion to drink the city water.

The Department's representative worked in harmony with the local board of health, receiving their hearty cooperation whenever it was needed. Our relations with the town council were at times some-

what strained, but this undoubtedly was the result of unusual circumstances which prevailed at that time. The council and citizens at large had for several months previously been planning for a big three-day carnival which was to celebrate the completion of the Geisinger Memorial Hospital and to show to the donor, Mrs. G. F. Geisinger, the town's appreciation of this munificent gift. The carnival had been scheduled to take place on September 22, 23 and 24, and had been widely advertised throughout the countryside, so that it was reasonable to suppose that a large out-of-town element would be drawn to the town. The Commissioner of Health, believing it prejudicial to the best interests of the public health of the State, requested council to postpone the carnival. This request was peremptorily refused, whereupon the Commissioner of Health ordered council to prohibit any demonstration which would tend to draw an abnormal number of people into Danville. This order was faithfully obeyed.

The Epidemiological Study.

Previous Incidence of Typhoid Fever in Danville. Typhoid fever is practically endemic in this borough. A review of the morbidity reports during the past six years showed an average rate of 38.0 per 100,000 population. This figure is probably too low, since many of the cases occurring during these years were transferred to the Bloomsburg Hospital prior to the confirmation of the diagnosis and reported from there. The average incidence of typhoid fever in Pennsylvania within the same period of years was approximately 19.58 cases per 100,000 population. It is evident, therefore, that typhoid fever at all times is unusually prevalent in Danville and the inhabitants are apt constantly to have a high resistance to the disease.

Disribution of Cases. There are 125 cases making up the basis of this study. These cases were distributed as follows: In the borough of Danville ninety-three cases; in Mahoning Township, which surrounds Danville on all sides, there were eight cases; in South Danville there were twenty cases; the remaining four cases were widely distributed in various parts of the State. These four cases will be dealt with separately, which leaves a total of 118 cases for study. The ninety-three cases in Danville were scattered widely over the borough.

The ward incidence is pictured in the accompanying chart:

Ward.	Population.	Cases Typhoid.	Morbidity Per 100,000.
First,	1,951	41	2,100
Second,	1,463	30	2,050
Third,	2,443	14	570
Fourth,	1,714	8	520
Total,	7,517	93	1,240

The difference in the morbidity rate in the first and second wards as compared with that in the third and fourth wards is striking. No factor can be found to account for this difference.

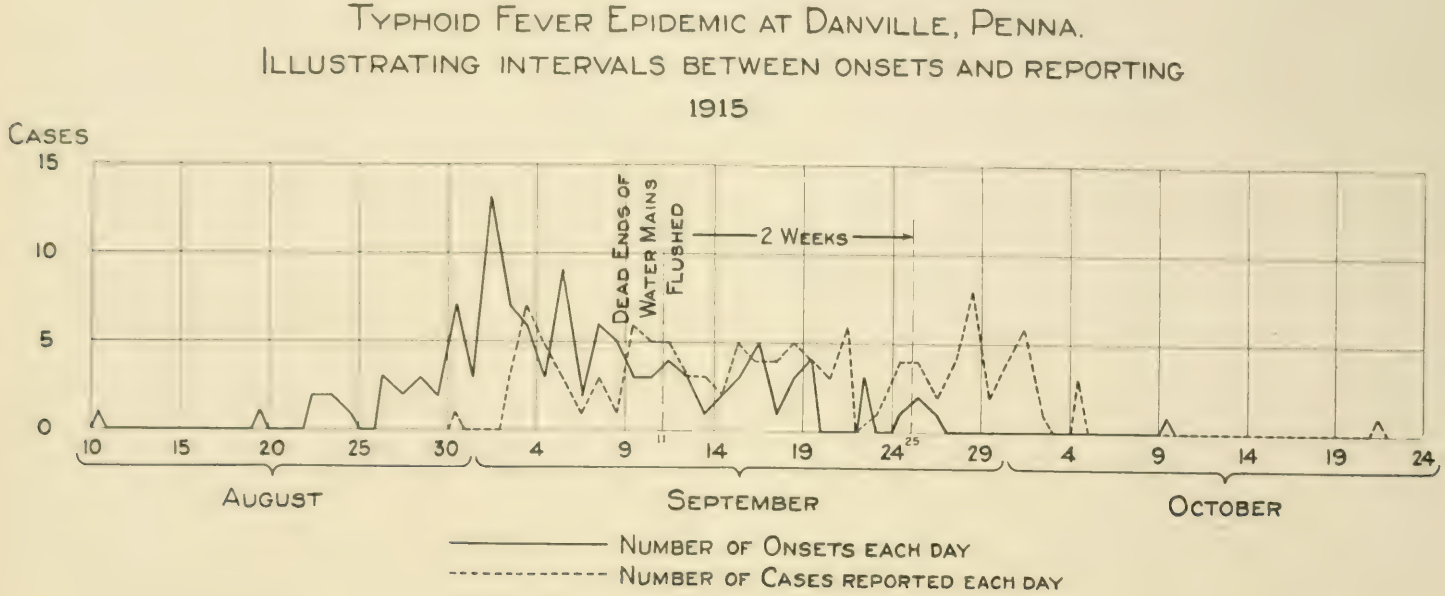
The distribution of the cases by households may be summarized as follows:

One case per house,	85
Two cases per house,	13
Three cases per house,	2
Four cases per house,	1
	101

The sixteen houses having more than one case had a total population of eighty-one or an average of 5.0 persons per house. In the eighty-five houses where only one case occurred, there was a total population of 387 which gives an average of 4.5 persons per house. It should be noted that eighty-five cases or 70.2 per cent. of the entire 121 cases occurred in houses where they alone of the inmates developed the disease. This unusually high percentage suggests a low community susceptibility, an organism of low virulence or a great dilution of the infecting agent.

Distribution by Dates of Onsets. On August 11 W. D. sickened with typhoid fever; the father of this three-year-old patient was employed as an orderly in the State Insane Hospital. No other case developed in Danville until nine days later, when cases sickened in greater and greater numbers until during the first week of September the maximum number per day was reached. The following tabulation of the dates of onsets pictures vividly the gradual rise in the onset curve, the sustained height of the curve, and the gradual decline in the number of cases until the latter part of September when they ceased to appear entirely.

Aug.	11.	1	Sept.	11.	3
	20.	1		12.	4
	23.	2		13.	3
	24.	2		14.	1
	25.	1		15.	2
	27.	3		16.	3
	28.	2		17.	5
	29.	3		18.	1
	30.	2		19.	3
	31.	7		20.	4
Sept.	1.	3		23.	3
	2.	13		25.	1
	3.	7		26.	2
	4.	6		27.	1
	5.	3		30.	1
	6.	9	Oct.	6.	1
	7.	2		10.	1
	8.	6		21.	1
	9.	5			121
	10.	3			


TYPHOID FEVER EPIDEMIC AT DANVILLE, PENNA.
ILLUSTRATING INTERVALS BETWEEN ONSETS AND REPORTING
1915
CASES
15
10
5
0
DEAD ENDS OF WATER MAINS FLUSHED
2 WEEKS
10 15 20 25 30 4 9 11 14 19 24 25 29 4 9 14 19 24
AUGUST
SEPTEMBER
OCTOBER
NUMBER OF ONSETS EACH DAY
NUMBER OF CASES REPORTED EACH DAY

In addition to these 121 cases there were four others referred to previously who developed typhoid fever subsequently to their sojourn in Danville. Two of the cases, M. R. and G. E., sickened at their homes in Philadelphia. Mrs. R. K. developed the disease while visiting in Limestone Township, Montour County, and H. B. sickened at her home in Williamsport. It was clearly proven in each case that these individuals had partaken of Danville water during its infectious periods.

Secondary Cases. There are five cases which may reasonably be considered secondary.

Case No.	Age.	Onset.	Referred to Case No.	Onset.	Medium.
74	1½	9-15	26	9-1	Direct contact with mother.
76	3	9-19	101	8-29	Direct contact with mother.
52	14	10-10	Insane hospital patient	9-8	Direct contact with father.
119	54	9-27	13	8-29	Mother whom she nursed.
120	51	9-23	105	9-6	Common drinking vessel.

With the exception of No. 120 all these had partaken of the Danville water within its infectious period and might well be looked upon as having received their infection from that common source. Case No. 52, however, with an onset two weeks beyond the main group, would seem to be more justly considered a true secondary.

Occupations. A study of the occupations of those infected gives little information on which to base a diagnosis of the epidemic, but does add to the evidence which tries to show that those in adult life had considerable resistance to the disease.

School,	42	Draftsman,	1
Under school age,	15	Iron workers,	2
Housework,	35	Butcher,	1
Mill worker,	2	Telephone operator,	1
Driver ice wagon,	1	Cook,	1
Nurse,	1	Farmer,	1
Clerk,	1	Merchant,	1
Clergyman,	1	Manufacturer,	1
Milk delivery,	1	Newspaper man,	1
Laborer,	10		
Carpenter,	2		121

It is to be noted that ninety-two or 76.0 per cent. of the cases attended school or had some domestic relationship with the home.

Age and Sex Incidence.

	Male.	Female.	Total.		Male.	Female.	Total.
0- 4 years,	4	8	12	40-44 years,	1	3	4
5- 9 years,	4	15	17	45-49 years,	2	3	5
10-14 years,	14	9	23	50-54 years,	4	5	9
15-19 years,	8	5	13	55-59 years,	0	2	2
20-24 years,	3	8	11	60-64 years,	0	1	1
25-29 years,	3	7	10	70-74 years,	0	1	1
30-34 years,	2	3	5				
35-39 years,	6	2	8				121

There were fifty-two or 42.9 per cent. of the cases under fifteen years of age. Thirty-four or 28.1 per cent. of the cases were between fifteen and thirty years of age. In previous water-borne epidemics in Pennsylvania an average of 60 to 80 per cent. of the cases have been between fifteen and thirty years of age. It is evident, therefore that the age morbidity in Danville was unusually marked in the early years of life. This fact together with the occupational incidence suggests again the probability of an acquired resistance to the typhoid toxine during adult life.

Methods of Transmission. Flies. This method of transmission may be eliminated from consideration, since in 105 of the cases screens were used, and in no instance among the secondary cases could flies be considered a factor.

Shell-fish. This mode of transmission may be dismissed with the statement that in no instance had shell-fish been used by the patients.

Ice cream. There were seventeen patients who had not used any ice cream. The remaining group of cases had obtained their supply from five sources. Careful consideration of the sources of cream which these dealers used to manufacture their product failed to throw the slightest suspicion on any of them as being the source of infection in this epidemic.

Milk. The milk supply for these cases was derived from twenty-one sources. One dealer, Mr. V. V., supplied forty of the cases, but since this dealer had by far the largest patronage in the town it would be expected that he should predominate among those who sickened. Every dealer and every dairy farm supplying milk to Danville was very carefully inspected in order to detect any insanitary conditions and to learn whether typhoid fever or dysentery had been present among the residents during the last few years. There were forty-three dairy farms inspected. Many suggestions were made as to the proper means for protecting wells and springs from contamination, as to the proper cleaning of stables and the satisfactory methods of cleansing the milk receptacles and protecting them from flies and filth. In only one instance was a history of typhoid fever elicited which dated within the last seven years. At this farm the sale of milk was dis-

continued, and the feces, urine and blood of the suspected individuals were sent to the State Department of Health Laboratory in order to determine the presence or absence of the typhoid bacillus (or its specific antibodies). Results were entirely negative.

Ice. All the ice used in Danville was manufactured from artesian water or imported from Pocono lakes. This method of transmission may, therefore, be dismissed from consideration.

Water. Under the direction of the Division of Sanitary Engineering, the amount of hypo-chlorite of lime added to the water of Danville was increased one-half pound per 1,000,000 gallons on September 1st. Further increases were made daily until September 5th, when the total quantity reached twelve pounds per 1,000,000 gallons. On the 11th of September the dead ends of the water mains were flushed, and on the 18th the entire water system was flushed. Again on the 25th hypo-chlorite of lime was increased to fourteen pounds per 1,000,000 gallons, and on the 30th of September copper sulphate was added in addition to the hypo-chlorite of lime in the proportion of one part to every million of water. It will be noticed by referring to the table of onsets that just three weeks after the hypo had been increased to twelve pounds and about two weeks after the dead ends of the water mains had been flushed, cases of typhoid ceased to appear. The general public was advised by the board of health about September 1st to boil all water used for domestic purposes. It was not until September 6th, one week after the fall session commenced, that water used by the children in the various schools was boiled. The following tabulation shows the types of water used by this group of patients:

	City Water.	Well or Spring.	Not Stated.	Total.
Used at home,	74	45	2	121
Used at work,	26	16	79	121
Used elsewhere,	28	1	92	121

Of the entire group but five cases gave a history of having used no Danville borough water. All of these cases lived in South Danville. One of them, A. R., was probably infected at his place of employment by using a common drinking vessel which was also used by two individuals during the prodromal state of the disease. The remaining four cases each stated that they had not been in Danville for several weeks previously, and had taken no water, ice cream or soda water in Danville for a similar length of time. Amongst these, Mr. J. C., a carpenter employed by the Pennsylvania Railroad to do repair work on bridges, was accustomed to drink water from any streams along the road with impunity, and it seems not improbable that he may have

contracted the disease in this way. His daughter M. C. of this group of cases developed the disease a few days after her father. Whether or not the father carried the organism to his daughter is an open question. The two remaining cases must remain in doubt, since every avenue of inquiry failed to establish any facts.

Diagnosis. The edipemiological diagnosis made was that the infectious organisms gained access to and were transmitted through the borough water. This diagnosis is made despite the fact that the water was filtered and treated with a disinfectant. It was shown by the Engineering Division that the method used for adding the hypochlorite of lime to the water was almost certain to result in an irregular dosage, and it was felt that at least for short periods of time no hypo-chlorite of lime entered the water at all. Moreover, the bacteriological evidence of contamination was shown in samples of water taken from the clear water basin and from the dead ends of the water mains. This clearly is sufficient evidence to prove that there was a weak link at some point in the line of water defense. That there was ample opportunity for the bacillus typhosus to get into the Susquehanna water is clear when it is recalled that there was insufficient treatment at the sewage disposal plant of the State Insane Hospital.

Since typhoid fever was to a greater or less extent prevalent in these communities, the river water must have been fairly well laden with typhoid organisms. The effluent from the State Hospital sewage disposal plant must have, most of the time, reached the intake of the Danville borough water supply, but only after being tremendously diluted. Further, the diagnosis is aided by the easy exclusion of such agents as flies, shell-fish, ice cream, ice and milk.

Clinical Study of the Cases. Some of the data which was gathered concerning the cases in this epidemic is summarized in the accompanying table:

Duration of Disease.

Under 2 weeks,	7 or 5.7 %
2-4 weeks,	89 or 32.2 %
4-8 weeks,	56 or 46.2 %
Over 8 weeks,	19 or 15.7 %

Complications.

Relapse,	8 or 6.6 %
Perforation,	1 or 0.82%
Hemorrhage,	13 or 10.7 %
Meningitis,	1 or 0.84%
Adenitis,	2 or 1.6 %
Phlebitis,	3 or 2.54%

Clinical Types.

Mild,	51 or 42.1 %
Severe,	63 or 52.0 %
Fatal,	3 or 2.47%
Atypical,	4 or 3.3 %

Careful survey of the facts above noted gives rise to some interesting deductions. The most striking figure is that of the fatalities; 2.47 per cent. of the 121 cases died. If the four additional cases mentioned elsewhere in this report are included, there were four deaths or 3.3 per cent. of the 125 cases. In similar water-borne epidemics in Pennsylvania the mortality has ranged from ten to fourteen per cent. The low mortality in Danville suggests that an organism of low virulence had been at work. Those under fifteen years of age should be proportionally more susceptible to typhoid than the adult population in a community where the disease is endemic and where a natural process of immunization is probably constantly going on; indeed this was so in Danville, as it will be recalled that fifty-two or 42.9 per cent. of the cases were under fifteen years of age. The average morbidity for this age period is about seven per cent. There was but one death in these fifty cases, or a mortality rate of two per cent.; for this same age period, the average mortality is approximately six per cent. It seems logical to conclude that the infecting organism was of low virulence. Reasons why the organisms were of low virulence cannot be given; it should be recalled, however, and may be pertinent to the matter in question, that the organisms causing this epidemic were taken from the Susquehanna River, passed through filters and subjected to at least a small amount of a disinfectant which may have modified the virulence of the organisms. The duration of the disease in 61.9 per cent. of the cases was over four weeks; again the mortality for the 121 cases was 2.47 per cent. Contrast these figures with those taken from the report on typhoid fever in the State Hospital for the Insane at Danville, which was similar to this epidemic in its extent and seasonal incidence; 27.7 per cent. of the cases were sick for a period of over four weeks and the general mortality was 14.8 per cent. The relationship is in inverse ratio. This might well be anticipated, for an organism of low virulence is not so likely to be destructive to the host nor to stimulate in the host a rapid formation for those antibodies whose role is to kill the organism.

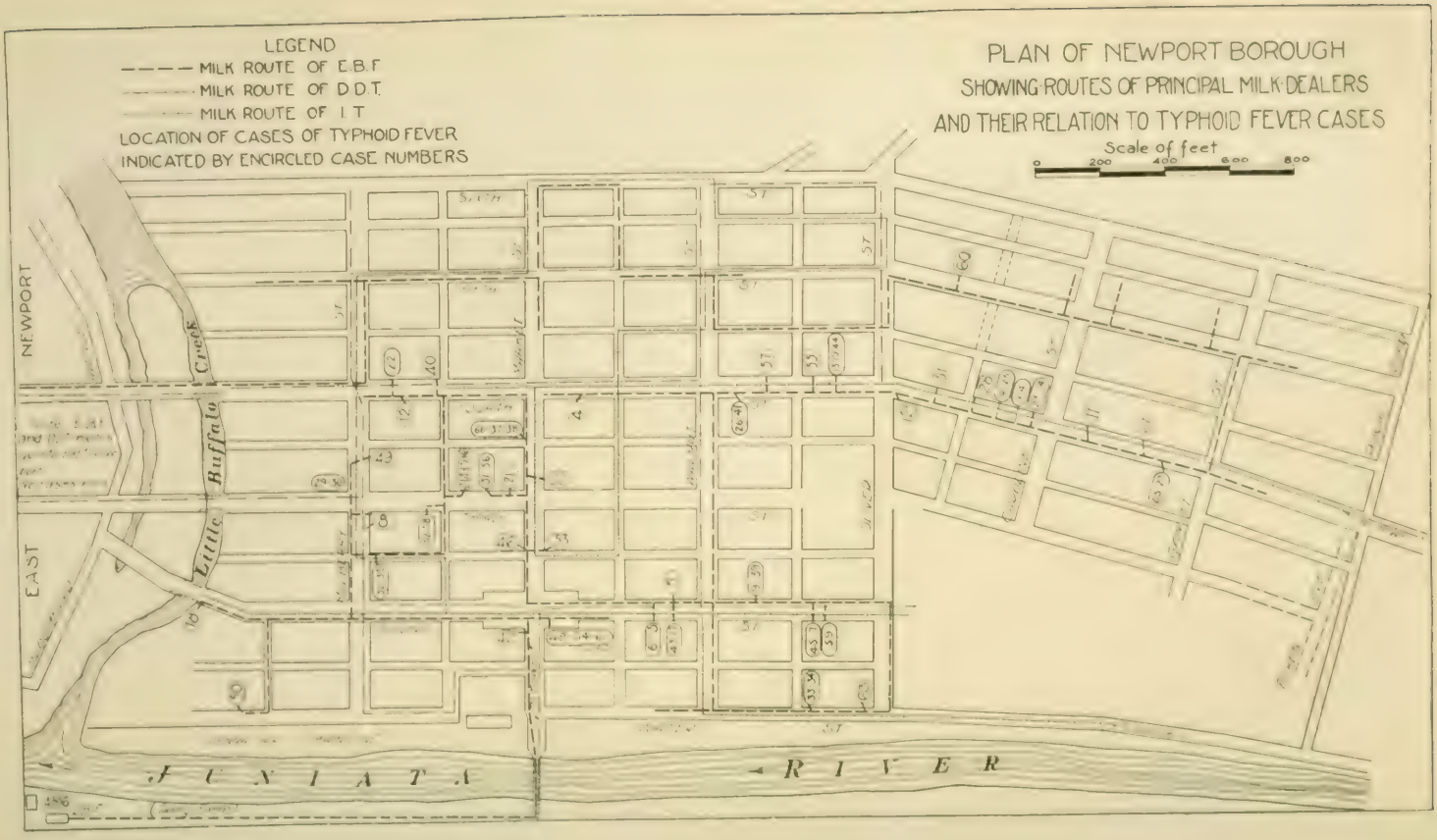
Epidemic Treatment. The first case of typhoid fever was reported to the board of health on the last day of August. Your representatives held a conference with the local health authorities four days later, which resulted in issuing a notice to boil all water used for household purposes and approving the immediate investigation of all sanitary conditions in any way related to the epidemic. As mentioned above, the Division of Sanitary Engineering directed the disinfection of the public water supply and closed all springs and wells which upon examination were found to be polluted. Under their direction a hypo-chlorite of lime apparatus was installed over the sewer mains so that all the town sewage would be disinfected before it entered the Susquehanna River.

By order of the board of health, all milk was to be delivered after September 9th to consumers in loose form. A dairy farm from which two persons were suspected of being typhoid carriers, as alluded to above, was prohibited from selling milk in Danville. No case in this epidemic was traced to infection by means of milk or milk containers.

The treatment of the individual cases was, of course, entirely in the hands of the local physicians and local institutions. A great aid to both the patients and the physicians was the work of the two Department of Health nurses; they visited all cases at least once and gave instructions and practical demonstrations in the proper methods of disinfecting clothes, dishes, hands and alvine discharges; they taught the people how to give cleansing and therapeutic baths to the bedfast, and when needed they regularly performed such duties themselves. In every way the nurses aided in reducing the chances for secondary infection. In the homes of the poorer class their work was of the utmost value. In these homes the nurse practically became the director of the household activities, and such services meant everything to both the sick and the well. The extent of the services rendered by the nurses can not well be tabulated or expressed in figures, but the following record will give some idea of the volume of work done. From September 8th until October 12th one and sometimes two nurses were on duty. During this period of thirty-four days, 344 visits were made and thirty cleansing and eighteen treatment baths were given. The nurses distributed to those in want disinfectants, cooking utensils and ice caps as required.

The G. F. Geisinger Memorial Hospital was prematurely opened on September 12th to accommodate many of those who needed or desired hospital treatment. This institution with its superb equipment treated fifty-three cases and relieved many needy homes of the burden of caring for the sick and the dangers associated therewith. It was indeed fortunate that this institution was practically completed when the epidemic broke forth.

Vaccination. The prophylactic use of anti-typhoid vaccine was considerable. The reports given by the various druggists in Danville showed that approximately six hundred and forty outfits of vaccine had been sold. In addition to this the State Department of Health furnished free to indigents one hundred and sixty-three outfits of vaccine. It is probable that all of the vaccine sold was not used, since a canvass of the physicians in Danville showed that about six hundred and fifty individuals or 8.6 per cent. of the population had been actually vaccinated; this figure includes the one hundred and sixty-three vaccinated with the typhoid vaccine supplied by the State Department of Health. Of this entire group of six hundred and fifty individuals two developed the disease within ten days after the first inoculation. No cases developed after the second and third inoculations.


LEGEND
MILK ROUTE OF E.B.F
MILK ROUTE OF D.D.T.
MILK ROUTE OF I.T.
LOCATION OF CASES OF TYPHOID FEVER
INDICATED BY ENCIRCLED CASE NUMBERS
PLAN OF NEWPORT BOROUGH
SHOWING ROUTES OF PRINCIPAL MILK DEALERS
AND THEIR RELATION TO TYPHOID FEVER CASES
Scale of feet
0 200 400 600 800
NEWPORT
EAST
Little Buffalo Creek
JUNIATA
RIVER

REPORT OF INVESTIGATIONS OF AN EPIDEMIC OF TYPHOID FEVER IN NEWPORT, PERRY COUNTY.

During April and May, investigations were jointly conducted by the Divisions of Medical Inspection and Sanitary Engineering of the State Health Department, in which investigations the following named officers of the Department engaged: Dr. C. J. Hunt, Associate Chief Medical Inspector; Dr. John J. Mullowney, Assistant Chief Medical Inspector; Assistant Engineer H. E. Moses; and Inspector of Water Filters Ira Ziegler.

Sixty-eight cases of typhoid fever occurred at Newport during April and May. The medical and engineering investigations are both set forth in the report, the water supply and sewage disposal questions having been investigated by the Engineering Division.

The population of Newport in 1910 was 2,009, and from all of the evidence collected it is probable that a marked fluctuation in the population has not occurred since that census was taken. The opinion is based on studies of industries, previous increases in population and the semi-retired character of its present citizenship. For these reasons, proportional studies of morbidity are based on the 1910 census.

Newport is a manufacturing community in the eastern part of Perry County on the west bank of the Juniata River, 11 miles above its junction with the Susquehanna River and 25 miles above Harrisburg. It is on the main line of the Pennsylvania Railroad and is the eastern terminus of the Newport and Shermans Valley Railroad, a narrow gauge line extending to New Germantown in the western end of Perry County.

Little Buffalo Creek forms the southern boundary of the borough, separating it from the settlement of East Newport, a community of about 300 people, virtually a part of Newport. To the north lies the settlement of Juniata Heights, also a part of the same community.

Next to Little Buffalo Creek the largest run passing through the borough is Dutch Gap Run. It enters a 24-inch sewer at the borough line at Sixth Street. North of this run smaller streams known as Fickes Run and Gantt Run carry drainage to the Juniata River.

Sewerage.

A public sewerage system was constructed in 1900. It is of the combined type and has four outlets two into the river and two into Little Buffalo Creek. Both of the river outlets are above the water company's emergency river intake. The first outlet to the river, 250 feet above the Market Street bridge, is at the foot of Dock Alley mid-

way between Market and Walnut Streets and is 48 inches in diameter. The sewer system tributary to this outlet is 1½ miles in extent and drains the central and most thickly built section of the town. The waters of Dutch Gap Run reach the river through this outlet.

The next public sewer outlet into the river, 550 feet above the Market Street bridge, is 24 inches in diameter, serves the western part of the built-up portion of the borough and has tributary to it a little over one mile of sewers.

About 750 feet above the Market Street bridge a culvert under the Pennsylvania Railroad tracks conveys surface drainage and wastes from the Elk Tanning Company's plant.

Below the bridge there are two 48-inch culverts for surface drainage and an 18-inch private sewer at the Newport Planing Mills.

The sewers discharging into Little Buffalo Creek consist of a 15-inch sewer, 2,000 feet long, discharging at the foot of Second Street; a 10-inch sewer, 400 feet long, discharging at Fourth Street; a 24-inch private sewer receiving surface drainage from East Newport, and a 6-inch private sewer just above Fourth Street entering from the Newport side.

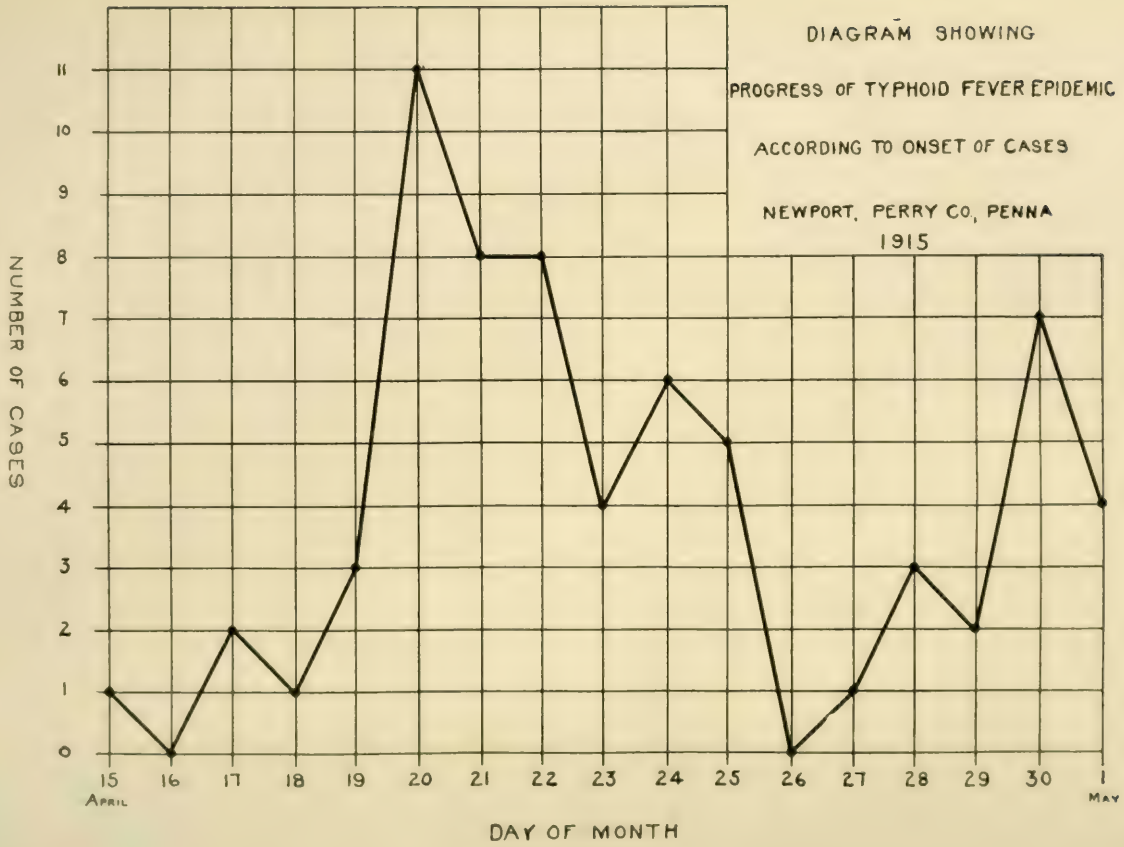
On November 9, 1907, a permit was issued to the borough of Newport, approving plans for a comprehensive sewerage system, which included sewage treatment works to be located near the mouth of Little Buffalo Creek, east of Mulberry Street. The plans provided for an intercepting sewer extending along the river front by which the sewage collected in the lateral sewer system was to be conveyed to the sewage treatment works. This project has not yet been carried out and the sewage from the borough is being discharged into State waters through the outlets as hereinbefore described. It is probably safe to assume that 95 per cent. of all of the sewage from the borough is discharged into the river, reaching it by way of the outlet at the foot of Dock Alley.

Water Supply.

The public water supply in the borough and adjacent settlements is furnished by the Newport Home Water Company, obtaining its supply from spring-fed streams three miles northeast of Newport on the opposite side of the Juniata River in the northern part of Howe Township.

Water from the principal spring flows through an open channel at least a quarter of a mile to a wooden box located along the side of the stream. From here it is piped to a lower box a short distance from which a supply pipe leads to a point down-stream, where it is joined by the supply line from the other springs. An 8-inch gravity supply main extends from here to the town.

On the drainage area above the company's intake there are two summer residences and a picnic ground, the latter situated near the


DIAGRAM SHOWING
PROGRESS OF TYPHOID FEVER EPIDEMIC
ACCORDING TO ONSET OF CASES
NEWPORT, PERRY CO, PENNA
1915
NUMBER OF CASES
0
1
2
3
4
5
6
7
8
9
10
11
15
APRIL
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
1
MAY
DAY OF MONTH

divide and reported to be the scene of a large so-called farmers' picnic occurring annually. A highway traverses the watershed and parallels the stream, being from 50 to 100 feet distant from it and at a higher elevation. The road is used principally during the winter season for lumbering purposes. Drainage from the road enters the stream. A circular distributing reservoir, having a capacity of 125,000 gallons and well protected from surface drainage, has been built along the supply line leading to the borough. The piping is so arranged that water may be passed around the reservoir, but usually all the water supplied to the town is first passed through the reservoir.

Across the river from the town the water company maintains a pumping station and filtration plant. An auxiliary source of supply is taken from the river and after being filtered is pumped into the supply main. The main has two branches across the river, one on the Market Street bridge and the other embedded in the stream.

Previous Typhoid Fever.

According to available records as well as local accounts, Newport has never been visited by an epidemic of typhoid fever until during the present year.

Sixty-eight cases of typhoid fever were studied, the tabulated results forming the basis of the report.

The records show the following cases of typhoid fever to have been reported during recent years: Prior to 1910 no reports were made, but, from data supplied by residents and particularly by the older physicians, it has been many years since the disease existed in epidemic form; during 1910 there were no cases; 1911, three cases; 1912, no cases; 1913, no cases; and 1914, three cases. So far as could be determined cases reported during these years were not of local origin.

Of the 68 cases occurring during 1915, 66 were temporary or permanent residents of the borough and two were residents of Howe Township, Perry County.

The dates of onsets are as follows:

TABLE I.

Date.	No. Cases.	Date.	No. Cases.
April 15	1	April 25	5
16	6	26	6
17	2	27	1
18	1	28	3
19	3	29	2
20	11	30	7
21	8	May 1	4
22	8	3	2
23	4		
24	6	Total	68

It is observed that the maximum number of cases first had clinical signs and symptoms during a period of ten days between April 20th and 30th, those developing earlier and later than these dates representing the usual accelerated or retarded onsets observed in all epidemics. On the basis of this table it was assumed that the infection was transmitted ten to fourteen days prior to the period in which the major number also show onsets, that is, subsequent to April 1st and prior to April 15th.

From a review of the facts concerning the public water supply, it does not appear that this was the source of the infection that caused this epidemic. The outbreak was not of the explosive type such as usually follows a water-borne infection, nor was it wide-spread enough to have been caused by a medium used by nearly every one in town.

The use of water by cases is shown in the following table:

TABLE II.

Supply.	No. Cases.
Newport Home Water Co. only,	44
Newport Home Water Co. and various,	11
Newport Home Water Co. and well,	7
Newport Home Water Co. and spring,	4
Spring only,	2
Total,	68

It is observed that all but two cases used the Home Water Company's supply. However, it should be noted that there were but sixty-eight cases in a community in which the disease had not been prevalent for a period of upwards of ten years and in which the residents would reasonably have acquired a high degree of susceptibility. With water as the means of transmission the expectant morbidity would probably be higher than in the present epidemic. As will be shown later, the distribution of cases was not general but in relation to the definite lines of travel of one milk route. These features alone are of considerable assistance in excluding water as the means of transmission.

Samples of the public water supply were collected during the course of the investigation. These were secured at the sources and at various points over the distribution system. Upon analysis they did not reveal the presence of organisms indicative of sewage contamination. However, the first set of samples was not collected until May 2nd, after the onsets of all of the cases.

The elimination of all other means of transmission except milk is based on the following data:

Ice was not in common use, at least by families in which cases occurred. It was found that 61, or 88 per cent. of the 68 cases, had not used ice; seven had used natural ice harvested on Little Buffalo Creek during the previous winter. The same supply was used in the restaurants and hotels with negative results among the patrons.

Thirty-three of the 68 cases had not used ice cream within the longest possible incubation period prior to the onset of the first case.

TABLE III.

Supply.	No. Cases.
Noll's Restaurant,	19
Noll's and Gant's Restaurants,	11
Noll's and Shade's Restaurants,	2
Noll's Restaurant and various,	1
Own make,	1
Gant's Restaurant only,	1
None,	33
Total,	68

Thirty-three used ice cream purchased at Noll's restaurant. The supply is manufactured on the premises from cream purchased from the Mifflin Creamery Company, Mifflin, Juniata County, Pa., twenty two miles west of Newport. Noll's sales average 120 quarts weekly and are not confined to the borough. The cream sold by the Mifflin Creamery Company has not been the means of transmission to other communities. For these reasons, ice cream was excluded as a factor in transmission.

Shell-fish had been used by but one case, and in that instance from a canned supply.

The use of uncooked vegetables and fruits was readily excluded as was shown in the following table:

TABLE IV.

Supply.	No. Cases.
Grocery,	1
Home grown,	3
None,	60
Unknown source,	4
Total,	68

The only positive evidence of the means of transmission was found in studies of the use of milk.

There are three principal milk vendors in Newport (referred to by their respective numbers) and two who discontinued sales prior to the period when the infection was transmitted.

Milk Supplies.

Vendor No. 1. W. F. sold an average of 20 quarts daily up to April 4th. The medical history of all dairy employes is negative.

Vendor No. 2. J. A. M. sold 12 quarts daily up to April 2nd. The medical history is negative.

Vendor No. 3. W. S. sold 20 quarts daily in Newport up to April 5th. The medical history is negative.

Vendor No. 4. E. F. conducts a dairy farm in Howe Township, Perry County, about two miles southeast of Newport and on the opposite side of the Juniata River. He maintains nineteen head of milch cows, producing 240 quarts daily, and in addition up to April 5th had purchased daily three to four quarts of cream from H. F. This supply was delivered in Newport to 179 premises.

Vendor No. 5. D. D. T. conducts a dairy farm in Howe Township about two miles east of Newport and delivers about 120 quarts daily to 120 premises, ten of which are in East Newport, Oliver Township.

Vendor No. 6. I. T. conducts a dairy farm in Oliver Township, Perry County, about two miles west of Newport. He delivers ninety quarts daily to one hundred premises; all of these are in the borough.

The first three vendors and the cream purchased from H. F. were readily excluded from consideration by studying the dates of onsets. A plotted curve of the latter shows two distinct periods in which cases are grouped, with a zero period between. The high points were April 20th and April 30th.

B. Typhosus infection transmitted between April 1st and 6th would not have caused the first period, and only as an extraordinary coincidence would the second period have followed transmission on those dates. In addition, it is noted that all three vendors delivered an average of fifty-two quarts daily. The average milk consumption in Newport is one quart to each house, which would mean fifty-two houses with sixty-eight cases, or more than one hundred per cent. morbidity. Likewise, it is noted that no one vendor sold enough to infect sixty-eight patients. All discontinued sales between April 1st and 6th.

The increase in sales at that time of Vendors Nos. 4, 5 and 6 does not influence the morbidity either in figures or distribution. With the exception of No. 5, all vendors sold in all portions of the borough and in Juniata Heights. The latter is an extension north of the borough into Oliver Township. Vendor No. 5 had ten customers in East Newport, an extension south of the borough into Oliver Township.

The source of milk supply by cases is noted in the following:

TABLE V.

Vendor No. 4,	59
Vendor No. 4 and No. 5,	1
Vendor No. 4 and No. 6,	3
Vendor No. 4 and Noll's Restaurant (W. C. Shatto),	1
Vendor No. 4 and Shade's Restaurant (No. 1),	3
Vendor No. 4 and Shaffer,	1
	68

It is noted in the above table that all persons having the disease purchased milk regularly from Vendor No. 4, the occasional supply being purchased from other vendors or retailers. It is also noted that 56, or 87 per cent., out of the total, had purchased milk from Vendor No. 4 alone.

Four cases occurred on the routes of Vendors Nos. 5 and 6. The milk routes of Vendors No. 4, No. 5 and No. 6 paralleled each other throughout the major portion of the borough. The four cases on the routes of Vendors Nos. 5 and 6 were divided among 220 families, receiving 210 quarts, while 68 cases on the route of No. 4 were divided among 179 families. These factors, plus the negative findings on the dairy farms and routes of No. 5 and No. 6, excluded the latter from consideration.

The number of persons exposed in premises in which the disease was reported was as follows:

TABLE VI.

Population by Houses.	Number Houses.	Total Population.	Population by Houses.	Number Houses.	Total Population.
1,	0	0	8,	0	0
2,	4	8	9,	2	18
3,	13	39	10,	1	10
4,	11	44	17,	1	17
5,	7	35			
6,	1	6			
7,	4	28	Total,	44	195

It is noted that 195 persons occupied forty-four premises (in which cases occurred), an average population of 4.4. The list includes one hotel and one boarding house; with these eliminated, the average population would be four per house.

Vendor No 4 served to 179 premises; with an average of four persons to each house, there would be 716 possible exposures, assuming, of course, that all used milk in its raw state. Based on this, the morbidity by exposure is 9.5 per cent., a reasonable morbidity percentage under ordinary conditions.

However, it was further found that No. 4 handled two classes of milk. One known as "cold milk" because produced the night previously was, so far as possible, the first to be delivered; the other, "warm milk," because it was produced the same morning, was delivered to families requesting fresh milk, or was reserved for delivery on the latter portion of the route. No cases were found on the "warm milk" route.

So far as could be ascertained approximately fifty per cent. of his supply was "cold milk" and (as will be shown later) this supply alone probably was infected. Hence the exposure was less and the morbidity was much greater (approximately 18 per cent.) than occurs in communities in which susceptibility is low.

The exclusion of all methods of transmission other than milk, the fact that all cases used milk from one vendor, and that only those using the evening supply were ill, justified the epidemiological opinion that the milk of Vendor No. 4 was the transmitting agent.

On this assumption, a study of the age of those having the disease seemed to be particularly important. The distribution in relation of age and sex was as follows:

TABLE VII.

Age Period.	Male.	Female.	Total.			
0- 4,	3	1	4			
5- 9,	6	2	8			
10-14,	5	2	7	28	7	
15-19,	5	4	9			
20-24,	5	2	7		7	
25-29,	3	5	8		8	
30-34,	3	4	7		7	29
35-39,	3	2	5		5	
40-44,	1	2	3		3	
45-49,	0	3	3		3	
50-54,	3	0	3		3	
55 and over,	0	4	4	40	4	18
Total,	33	35	68			

It is observed that twenty-eight, or 41 per cent., were under twenty years of age and that there is no unusual variation as shown in the distribution between sexes. Generally speaking, it is a safe assumption that the predominance of younger age groups among all patients points to milk or ice cream as the source. The equal distribution between sexes suggested that some factor peculiar to one sex alone was absent. This is confirmed by studying the occupation of cases: Two-thirds were domestic in occupation or relations; one-third was variously occupied in and outside of the borough.

In investigating the medical history of the residents of the dairy farm of Vendor No. 4, the following facts were learned. The farm is located in Howe Township, Perry County, and is approximately

two mi'es from the borough of Newport. A double farm dwelling is occupied by seventeen persons, consisting of the father and mother of the vendor, the latter's wife and six children, his sister, Mrs. M. C. W., with four children, and two brothers. A careful study was made of each member of the family, particularly of the adults, the results being negative in every instance.

Inquiries were carefully made as to febrile disease in early childhood, of all clinical processes which may have been wrongly diagnosed, and of complications of typhoid fever having prominent clinical symptoms which might have offered a clue to illness in each member of the double household.

Despite the negative history, it was deemed advisable to make a careful agglutination test of the blood of each adult or child who had anything to do with the production and sale of milk. In this investigation it was found that Mrs. M. C. W., sister of Vendor No. 4, gave a positive reaction in a dilution of 1-50. A further study was at once made in order to determine the titer in which the positive reaction might be obtained. A strongly positive reaction resulted with a titer of 1-800. Cultures of the blood, feces and urine were made on the same date, a typical B. Typhosus being recovered from the feces and identified by the usually accepted criteria. The blood and urine cultures were negative to pathogenic forms.

The history of Mrs. M. C. W. is as follows:

For two years prior to April 1st she lived with her husband and children in Rye Township, Perry County, which is immediately west and north of Marysville, and is not accessible to the Newport district. Her husband, aged 42, developed the onset of an illness on February 4th, which was diagnosed on February 17th by Dr. E. Walt Snyder, of Marysville, and confirmed by Dr. F. W. Coover, of Harrisburg, as typhoid fever. The patient developed evidence of perforation and died on February 23rd.

During the period of illness he was nursed by Mrs. M. C. W., who also did the laundry and all other household work. From the evidence given by her, it is probable that measures prescribed to prevent secondary infection were not at any time carried out. Five weeks after the death of her husband she removed her family and household goods to the premises of her brother in Howe Township and on April 4th began her first work in the dairy barn.

Close inquiry developed the fact that she and the wife of Vendor No. 4 did the major portion of the *evening* milking; that she occasionally helped with the morning milking, but that the vendor himself and others did the major portion of the morning work. She continued in this work from April 4th to May 2nd, inclusive.

Your attention is directed to the findings (presented in the first portion of this report) showing that all cases of typhoid fever had used the "cold" or evening milk furnished by Vendor No. 4.

Two of the sixty-eight cases occurred on this dairy farm, both milk drinkers, one a daughter of the vendor, G. F., aged 8 years, onset April 24th, the other, a daughter of Mrs. M. C. W., M. W., aged 2 years, onset April 28th. By referring to Table I, it is noted that the onsets of cases in Newport borough begin on April 15th, the maximum number occurring on April 20th. It is apparent that these two cases were victims and not in any way the cause of the epidemic.

In view of the foregoing facts, an epidemiological diagnosis of transmission from a chronic typhoid carrier by means of milk was established. This opinion and the reasons were presented to the local board of health who had charge of and conducted all administrative measures.

Patients in the practice of local physicians were seen by request in consultation, and in certain cases, the blood sera were studied.

An arrangement was made whereby the carrier was admitted to the University of Pennsylvania Hospital in the service of Dr. Alfred Stengel. The following partial report, dated July 9, 1915, has been received from the Medical Division of that hospital: "Widal strongly positive; blood culture sterile; culture of urine sterile; three cultures of feces; from the third there was isolated an organism which culturally, morphologically and in its agglutination reactions is identical with the typhoid bacillus. We consider the examination of the patient now progressed to the point where it is proper to attempt the elimination of the organism."

Miss Sara Butler, nurse attached to Tuberculosis Dispensary No. 13, was assigned to duty as district nurse in Newport. She was on duty from May 13th to June 3rd, inclusive, a period of eighteen days.

During this period she made 302 visits, an average of about fourteen visits each day; fifty-one baths were given for reduction of temperature or cleansing purposes; four enemas were administered in different cases, and assistance was given in catheterizing several patients. In addition, twenty-four hours were given to relief of special nurses.

Through her efforts the following supplies and special foods were provided for needy patients:

Sheets,	26	
Pillow cases,	26	
Night shirts,	1	
Chloride of lime,	4	families
Liquor cresolis comp.,	4	"
Alcohol,	2	"
Ice caps,	3	"
Bed pans,	1	"
Feeding cups,	3	"
Broths,	8	patients
Cup custards,	8	"
Cornstarch,	1	"
Junket,	1	"

There were no secondary cases. This alone justifies the use of the Department's nursing service in municipal epidemics. It is the opinion of the reporter and of the Newport board of health and physicians that such a record is possible only because of efficient teaching of hygiene and sanitation under the direction of Miss Butler.

There were 9 deaths, a mortality of 13.2%.

Remedial Measures.

On May 3rd the board of health of Newport became alarmed by the number of typhoid fever cases on Mr. F.'s milk route, and on the following morning he was served with a notice forbidding him to furnish milk in the borough until he could satisfy the board of health that his dairy and all utensils were free from any possible typhoid contagion. The matter of enacting and enforcing an ordinance for the proper regulation of the milk supply of the borough was taken up promptly by its officers. The need of such action was made very plain by the epidemic, although it is not at all certain that such regulation would have completely guarded against the unusual circumstances of the epidemic in question.

An emergency chemical disinfecting apparatus was installed on May 3rd, at the instance of the Department, so as to treat the water from the upland streams at the mouth of the inlet pipe to the reservoir. Slightly less than one part of chlorinated lime to a million parts of water was used. On May 4th, after the beginning of the treatment, the entire distributing system was thoroughly flushed. The board of health spread notice verbally and also through the press to boil all water used for domestic purposes until the source of infection should be definitely determined.

The following letter emphasizing the faulty features involved in the borough's water supply was addressed to the water company:

"June 21, 1915.

"Newport Home Water Company,
"Newport, Pa.

"Gentlemen:—

"During the recent typhoid fever epidemic in Newport, officers of this Department made a careful inspection of the sources from which you derive a supply of water. This investigation emphasized certain dangerous features to which your attention was called in the permit issued February 23, 1909, when you were directed to make periodic inspections of the residences upon the watershed. Conditions at the present time indicate that this inspection is not sufficient to guarantee the purity of the water entering your system.

"The water from the springs flows for a considerable distance upon the surface of the ground before entering your pipe lines and in doing so is exposed to pollution from the public roads and from people traversing the watershed. You should at once procure the services of an engineer skilled in water works design and construction to prepare plans for an adequate method for the protection of the supply derived from upland sources and supplied to the public, or for the purification of

this water in a modern filtration plant. You are hereby directed to make such studies and to submit the results to this Department for approval within three months from the date of this communication.

"Until such time as permanent protective measures may be installed in accordance with plans approved by this Department, it will be necessary for you to maintain in continuous operation the apparatus for the addition of a chemical germicide to the supply derived from these sources as a temporary protective measure. Reports showing in detail the daily operation of this apparatus are to be submitted to this Department each week.

"Yours truly,

"SAMUEL G. DIXON."

The danger to down-stream towns from the typhoid laden sewage of Newport was reduced to a minimum by the disinfection of the sewage with chlorinated lime at the instance of the Department. On May 5th apparatus for this purpose were set up over the Dock Alley sewer and the Walnut Street sewer, 200 feet back from their outlets. On May 13th an additional apparatus was set up over the Second Street sewer, which discharges into Little Buffalo Creek. The chemical was used at the rate of thirty parts of chlorinated lime to a million parts of sewage.

By the installation of these three germicide plants it was believed that the sewage from the homes of all patients in the borough with but one exception would be treated before passing into State waters. At the home referred to extra precaution was taken and the wastes from the patients buried and not discharged into the sewer.

The following letter was sent to Newport:

"June 21, 1915.

"To the Borough Council of
"Newport, Perry County, Pa.

"Gentlemen:—

"The investigation carried on by this Department during the recent typhoid fever epidemic in Newport emphasized certain actions taken by the State in the past and disclosed other dangerous conditions in the borough which I wish to bring to your attention.

"The sewage from the borough being discharged into the Juniata River causes a special menace to the purity of the water taken from the stream a short distance below some of the sewer outlets and delivered to your citizens. Although the water is filtered, the presence of the sewage causes a potential menace which would become a positive danger in case the filters should not be operated at the highest possible efficiency. This sewage likewise causes a general menace to all of the water used as a supply to the public in the municipalities below on the Susquehanna River. About ten years ago the State recognized this danger and issued a decree to the borough, requiring the preparation of plans for the collection of the sewage and its treatment at a suitable site before discharge into the river. Your borough accordingly caused plans for an intercepting sewer and outline plans for sewage treatment works to be prepared and submitted to the State for consideration. These plans were approved in a permit issued on November 9, 1907, which was accepted by the borough and made a matter of public record by recording in the office of the Recorder of Deeds for Perry County on January 9, 1908. The time set for

the discontinuance of the discharge of raw sewage into State waters was July 1, 1910. At this time, in spite of this action on the part of the State and the acceptance of the terms of the permit by the borough, you have not proceeded with the construction of this intercepting sewer and sewage treatment works. The discharge of sewage into State waters since that date has therefore been in defiance of the provisions of law. You should at once consider ways and means of complying with this decision relative to sewage discharge.

"This Department is also of the opinion that your borough shall undertake a regulation of the milk supplied to your citizens and adopt such ordinances and regulations as may be necessary to properly carry on the inspection work.

"There are certain features of your public water works system which the Department feels should be remedied. These are due principally to changed conditions along the sources of supply. We are accordingly taking the matter up with the water company.

"I would request that you consider this communication at the earliest opportunity and inform this Department definitely of the measures you propose.

"Yours truly,

"SAMUEL G. DIXON."

INVESTIGATION OF TYPHOID FEVER EPIDEMIC IN SHIPPENSBURG, CUMBERLAND COUNTY.

An epidemic of one hundred and eleven cases of typhoid fever at Shippensburg, Cumberland County, during September and October, 1915, was jointly investigated by the Divisions of Medical Inspection and Sanitary Engineering.

The following named persons engaged in the investigation: Dr. B. F. Royer, Chief Medical Inspector; Assistant Engineers W. C. Riddle and A. J. Smalshaf; Inspectors John K. Miller and E. A. Falter; Miss Parsons, Assistant Chief Nurse; and Department Nurses Miss Lucy Shellenberger, Miss Florence Matthews and Miss Ida J. Lockett.

At the same time and by the same persons, cases were investigated in adjacent territory in Cumberland and Franklin Counties.

On the twenty-eighth day of September, Dr. Bruce McCreary, of Shippensburg, reported an unusual number of patients ill with a fever, first believed to be malaria, but clinically resembling typhoid fever. He requested that Widal outfits be supplied and that a medical consultant from the Department be sent to Shippensburg. A preliminary survey, with information obtained by interviews with physicians, indicated a serious situation. Dr. McCreary had ten cases under his care, and other local physicians had from one to three cases, making a total of twenty-four fever cases in which there was a strong probability of typhoid. It was evident that a serious situation existed and that immediate study of the situation from an epidemiologic standpoint was needed. The local board of health, at a called meeting, requested the State Department of Health to lend its aid and

power in determining the source of the trouble and thus prevent the spread of the disease, and accordingly physicians, stream inspectors and nurses were sent at once, and a supply of water shipping containers and Widal outfits was sent to Shippensburg. A letter was sent to each practicing physician of the district, thanking him for notification and co-operation, and advising him of the probable seriousness of the outbreak. He was also informed of the preparations made to assist him in laboratory diagnostic procedure, the supplying of Department nurses and the furnishing of typhoid vaccine to the poor, if necessary.

Shippensburg is located in the southwestern section of the Cumberland Valley on the Cumberland-Franklin border along the main line of the Cumberland Valley Railway, and is the terminus of one branch of the Western Maryland Railway and of a branch of the Reading Railway. The borough has a population of about 3,500. Across the Franklin County line is a considerable population that has not been incorporated, and northeast of the town proper, in Cumberland County, is another section not yet included in the corporate limits, now a part of Shippensburg Township. These outlying districts are integral parts of the municipality, however, and are included in the area served by the common water supply of Shippensburg, and easily include a population of an additional five hundred persons.

The water supply for the Shippensburg territory comes from surface sources in South Mountain.

Middle Spring stream rises along the South Mountain six miles south of Shippensburg and passes through the extreme western part of the town to its confluence with the Conodoguinet Creek three miles to the north. Bird Run rises in the South Mountain and flows through the eastern part of the borough to its confluence with Middle Spring just north of the borough.

Water Works System.

Shippensburg is supplied with water from a municipal system obtaining its supply from Furnace and Whiskey Runs. Dams are constructed on these streams and the water is delivered therefrom by gravity to distributing reservoirs situated just outside the borough from which it passes through two gravity supply mains to the distributing system.

The storage reservoir on Whiskey Run, known as the Cleversburg reservoir, is located approximately 23,000 feet southeast of the borough, just below the junction of Cato and Milesbrun Runs. The drainage area above this dam, mostly State Forest Reserves, comprises approximately four square miles of mountain land covered with timber, largely of the second growth. During about three weeks of

the month of April, 1915, from 22 to 26 men were employed by the Pennsylvania State Forestry Department planting about 200,000 scrub pine-trees on the watershed above the Cleversburg dam. These men lived in tents, the camp being situated about 40 feet from the stream and four feet higher, on sloping ground draining toward it. A privy, comprising a pit about one foot by two feet in plan and four feet deep, was located 80 feet below the camp at a point about 40 feet from the stream and about eight feet higher, also on ground sloping toward it.

"Big Flat" is a large tract at the head of the drainage area and contains a portion of a peach orchard and one house occupied during the fruit season. This house is located on sandy soil, at least one-half mile from a watercourse. During berry season as many as seventy-five pickers in one day traverse the shed, and it is said to be common for three or four loads of berries to be taken off the shed in a day.

The Cleversburg dam is located just on the edge of a public road. It is reported that bathing in the dam is common.

This road throughout a length of about three and one-half miles follows closely the course of the stream. At a number of points it is less than ten feet distant from the water and at about the same elevation. However, throughout the greater part of its course the stream is considerably lower than the road. It is reported that this road is to be made a part of a State Highway extending from Shippensburg to Gettysburg. The Pennsylvania State Highway Department has been improving this road since August 4th, the maximum number of men employed at any one time being eighteen. From August 4th to August 15th, the men were employed on the Big Flat, at the extreme limits of the watershed, and beyond this point. From August 15th to September 23rd, the men were employed on the Baltimore road at points below the dam, and after September 24th they were working on the watershed. At the time of the investigation on October 4th, twenty-one twelve-inch square box underdrains had been constructed across the road for delivering road drainage directly onto the steep hillsides leading to the stream feeding the Cleversburg dam, and work was progressing on the installation of seventeen additional box underdrains, all on the drainage area.

The dam on Whiskey Run is of concrete construction, forming a reservoir of approximately 1,000,000 gallons capacity, the surface of the water being 270 feet higher than the distributing reservoir with which it connects. It is approximately 175 feet long and 10 feet in height. The spillway, 75 feet in length, is located in the center and has a depth of 6 inches; it discharges into a stone fill, the top of which is 3 feet below the crest. The intake chamber, of plank construction, 5 feet by 5 feet in plan and about 4 feet high,

is located in the reservoir near the east end of the dam. It is provided on three sides with vertical screens through which the water enters. A twelve-inch blow-off pipe is provided.

The gravity supply line leading from the intake chamber to the distributing reservoirs has a total length of 21,540 feet, of which amount 12,000 feet are 8 inches in diameter and the balance 6 inches in diameter. The gravity supply line extends from the dam along the Baltimore road to a point approximately one mile distant from the reservoir. At a point about 8,500 feet below the dam a four-inch reducing to two-inch branch line extends approximately 3,000 feet to the village of Cleversburg, where about twenty-five houses are supplied with water. There are a total of thirty-three suppled with water from the public line extending from the Cleversburg dam to the distributing reservoirs. Twenty-one of these properties have no other source of supply. There are dug wells at four of the other properties, but it is statetd that they are never used. The remaining eight properties have either wells or cisterns that are placed in use in case of emergency, or during the hot summer months. One case of typhoid fever occurred in this section, on the property of R. H. S., where the supply from the Cleversburg dam was used exclusively; however, the family made numerous visits to Shippensburg.

On September 2, 1914, a permit was issued to the borough of Shippensburg for permission to construct an impounding reservoir on Furnace Run at the site of the small existing dam and to construct a new ten-inch gravity main from the proposed dam to the existing distributing reservoirs. The plans approved called for a structure 14 feet in height and 234 feet long, impounding approximately 400,000 gallons. These plans were not followed out and the borough built a stone masonry dam with concrete core wall and spillway, having a total height of 22 feet and impounding, according to a statement by the water works superintendent, 8,000,000 gallons. Plans of this work have not been filed with the Department.

This dam, known as the Stony Point dam, was completed about the middle of May, 1915. The work was done under contract by a New Jersey firm and foreign labor was employed almost exclusively. During part of the work as many as 75 men were employed at one time. Immediately below the dam a pit was provided for the convenience of the workmen. Sanitary Inspector H. A. Miller visited the site of the dam at least eight or ten times during construction work. John Coffey, secretary of the local board of health, made inspections semi-weekly during construction. The contractors were notified by both Mr. Miller and Mr. Coffey as to the necessity for preventing the depositing of excrement by the workmen on the watershed above the dam. They both agreed that these instructions were conscientiously carried out and there is no information at hand to

lead us to believe that nuisances were created above the dam by the workmen. The men resided in structures located at least one and one-half miles below the dam. The statements relative to the precautionary measures taken were corroborated by C. P. Mateer, president of council, and other members of council who visited the site many times during construction work.

The dam is situated 24,000 feet south of the borough. The watershed comprises 2.3 square miles of mountain land covered with second growth timber and lying wholly within the State Forest Reserves. The only habitation on the watershed is a forest ranger's cabin. Inspections of this property made at the time of the recent investigation revealed the premises in a sanitary condition. This cabin was built by G. K., of Fayetteville, former forest ranger. He lived in the cabin until four years ago when he died of tuberculosis. In recent years the cabin has been occupied chiefly during the hunting season by W. T., a forest ranger, who died on September 14, 1915, of heart failure. The only road on the watershed is but a trail, being used by no one except the State forester, a ranger in this section and hunters who frequent the shed during season.

There are twelve properties along the gravity supply line leading from the Stony Point dam to the distributing reservoir provided with the public supply of water. Five of these have no other supply, three have wells or springs which are stated to be not in use and four have wells or cisterns which are used in emergency or during the summer months. One case of typhoid fever occurred on this line, contracted probably in the town.

The existing distributing reservoirs, two in number, are located in Southampton Township, approximately 4,000 feet from the southern borough line at an elevation of about 150 feet above the business section of the borough.

Both basins are rectangular in shape and of reinforced concrete construction. The larger one is 170 feet square in plan at the edge and 130 feet square in plan at the bottom, with a depth of 22 feet and an available capacity of nearly 3,000,000 gallons. The smaller reservoir is 130 feet by 80 feet in plan at the top and 12 feet deep with a capacity of 500,000 gallons. The surrounding walls of each basin have inside slopes of about one to one. Each reservoir is provided with an overflow pipe. A six-inch cast iron outlet drain pipe leads from the smaller reservoir and an eight-inch blow-off pipe from the larger one, both discharging into the eight-inch main overflow line. Both the gravity supply lines leading from the existing storage dams to the reservoirs are so arranged at the distributing resevoirs that water from either source may be delivered to either reservoir or by-passed around the basins into the gravity supply lines leading to the borough.

Two gravity lines lead from the reservoirs to the borough. An eight-inch line extends from the smaller reservoir, entering Shippensburg on Carl Street and a twelve-inch line from the larger reservoir leads direct to the borough on Fayette Street. The distributing system enters the entire built-up area of the town and practically the entire population uses the public supply. Water is also supplied to approximately 1,000 people living beyond the borough limits, many of whom reside in what is known as the West End of Shippensburg. The distributing pipes range from four to twelve inches in diameter and total in length about ten miles. There are approximately 1,200 taps on the system and the consumers number about 5,000. The average daily consumption is estimated to be 500,000 gallons, of which amount approximately 135,000 gallons each twenty-four hours are furnished the Cumberland Valley, Philadelphia and Reading and the Western Maryland Railroads. Meters are installed on the service lines supplying the railroads, factories and domestic consumers beyond the borough limits. It would appear from the foregoing that the per capita daily consumption, exclusive of the water furnished the railroads, is about 70 gallons. Valves for the control of water in the distributing system are advantageously located and fire hydrants numbering 70 are located throughout the entire system at each street intersection and other necessary points. An average pressure of about sixty pounds is obtained. The distributing system is well designed, there being but eight dead ends. The water used by the Shippensburg territory has come from the same source for a period of twenty years and without any very great influence on the health of the citizens. The autumnal typhoid rate was high in previous years.

The epidemic of typhoid fever which is under consideration exceeded one hundred cases, came suddenly without warning, was somewhat explosive in character, was widely distributed throughout the entire water area and disappeared as soon as the precautions instituted by the Department had time to show their influence. The exact place where the water received its pollution and the exact source of the pollution have never been definitely proved. The most likely sources were pollution of the watershed of Whiskey Run by employes of the State Highway Department while working on sections of the watershed repairing roads, or pollution of the shed by employes of the State Forestry Department, the pollution occurring at the time of the great planting of pines during the spring and early summer.

In dealing with the epidemic, our efforts at first were exerted in determining the probable source of the infection and then in eliminating it. Our preliminary survey on the 28th of September, together with the study of fifteen additional persons sickening and reported by physicians of the borough on the 29th of September, and the check-

ing of all cases investigated during these two days against food supplies and water distribution, enabled us to determine pretty definitely that we were dealing with a water-borne epidemic. The engineers, accordingly, installed copper sulphate treatment plants at points along the distribution system, first at the intake dams in the mountains where the water was collected for the purpose of directing it into the distributing reservoirs, and again at the distributing reservoirs. The public was warned by notices through the press that all water should be boiled, and on the first of October, after the preliminary treatment of the distributing reservoirs and the dam supply, warning was sent to every householder to flush his water mains and house taps at four o'clock—the notice reading as follows:

TYPHOID FEVER

October 1st, 1915.

In order to completely flush all the water mains in Shippensburg and vicinity, each householder is requested to open each and every tap in his dwelling and other buildings at 4:00 P. M. to-day and let the water run full force for fifteen minutes.

By order of
SAMUEL G. DIXON,
Commissioner of Health.
John E. Coffey, Sec. of B. of H.

On September 29th apparatus of a temporary character was installed, both at the Stony Point dam and the Cleversburg dam. Copper sulphate was used as a germicide and the water was treated at the rate of three parts per million gallons. The apparatus in each case consisted of a mixing barrel and feed barrel equipped with a float for maintaining a constant head.

On October 1st the water in the distributing reservoirs was disinfected by the addition of thirty pounds of copper sulphate, the chemical, in a burlap bag attached to ropes, being dragged from side to side of the reservoirs.

Immediately upon the installation of the germicidal plants the entire distributing system was flushed, all the fire plugs being opened. Instructions were given to allow each plug to run until the water became clear. This was followed out in most cases where the neces-

sary time for this purpose did not exceed ten minutes. On Friday, October 1st, all the plugs were opened the second time and the water was allowed to run in each instance until it cleared up.

The Cleversburg supply was shut off from the borough on Saturday morning, October 2nd, because of the danger of pollution incident to work upon the public road extending throughout the length of the watershed above the dam. The supply from the dam was wholly turned into the small distributing reservoir and the valve on the gravity line leading from this basin to the distributing system was closed.

An apparatus was also installed at the large distributing reservoir for the treatment with copper sulphate of all water obtained from the Stony Point dam. This was thought advisable as the Stony Point dam is about seven miles from the borough and was receiving attention but once in twenty-four hours. When this plant was installed five pounds of copper sulphate per twenty-four hours were used and the amount used at the Stony Point dam was reduced to approximately four pounds per twenty-four hours, making a total rate of about two parts per million gallons.

Immediately after the plants for the addition of a chemical germicide were installed at the Stony Point dam, the Cleversburg dam and the distributing reservoir, and after the entire distributing system had been thoroughly flushed, work was started on the cleaning of the Cleversburg dam and the distributing reservoirs. It was not deemed necessary to drain and clean the Stony Point dam.

The Cleversburg dam was the first one cleaned. The dam was drained Saturday night, October 2nd. On Sunday morning the valve on the supply line at the dam was closed and not opened until the cleansing of the reservoir was finished at five P. M. on October 5th. The consumers along the gravity line between the dam and the reservoir were notified that the supply would be shut off for a couple days. They were not, however, without water for the three days consumed in cleaning and filling the dam, for the capacity of the gravity supplying line was available. Seven men were employed October 3rd and eight men October 4th in cleaning the dam. All mud, loose earth, large stones and rubbish were removed. The flow of water from the stream was diverted to various portions of the reservoir bottom and in this way a thorough cleansing was accomplished. Most of the sediment was washed out through the blow-off pipe and about twenty-five cubic yards were hauled out by a four-horse team. In many places the mud was a foot deep, while in one place, in a depression, it was deposited to a depth of nearly five feet. The odors produced by removing this material were so nauseating that the men could not work constantly for any considerable length of time. The cleansing was completed and the blow-off closed at two

P. M. October 5th. As the capacity of the reservoir is approximately 1,000,000 gallons, twenty-five pounds of copper sulphate were used to disinfect the water as the reservoir was filled. A burlap bag containing this amount was placed in the stream at the inlet end of the reservoir. The valve on the gravity supply line leading from the reservoir was opened at five P. M. October 5th, supplying water to the consumers located only along the gravity line between the dam and the distributing reservoirs. The surplus water passed into the small distributing reservoir and out the overflow pipe. This reservoir was not connected to the distributing system. Upon the completion of the filling of the Cleversburg dam, the copper sulphate plant was again placed in service at this point. The water works superintendent originally stated that the Cleversburg dam had been cleaned last year, but finally admitted that it had not been cleaned since 1912.

On October 5th at five P. M., the water works superintendent, contrary to instructions, turned the supply from the Cleversburg dam into the large distributing reservoir which was at that time connected directly to the distributing system. This was discovered at six A. M. October 6th, and the supply was shut off.

On the morning of October 6th, work was started on the small distributing reservoir, this basin having been emptied during the night of October 5th. Water for cleansing purposes was obtained from the six-inch line leading from Cleversburg dam. About 80 pounds pressure was available at the distributing reservoir and a fire hose was attached to the gravity line. The sides and bottom were thoroughly washed with water under this pressure. About an average of four inches of mud had accumulated on the bottom. This was all washed out through the blow-off pipe. After the reservoir was cleansed the sides and bottom were sprinkled with a solution of copper sulphate, eight pounds being used. The cleansing was finished at six P. M. October 6th. At this time the entire flow from the Stony Point dam was diverted from the large reservoir to the small reservoir and the germicidal apparatus moved over to the small reservoir. On the morning of October 7th the drainage of the large reservoir was commenced. At this same time the small reservoir, which was then receiving the entire flow from the Stony Point dam and which had filled over night, was connected with the distributing system. It is reported by the water works superintendent that this reservoir was cleaned during the summer of 1914.

The emptying of the large reservoir proceeded slowly and it was not until about noon on October 8th that the cleansing work could be undertaken. The reservoir was cleaned in the same manner as the small one, the sides and bottom being sprayed with a solution of copper sulphate, thirty pounds being used in the operation. After

the spraying was completed the sides and bottom were washed down and the water used in this process drained out through the blow-off pipe. The bottom was covered with mud to an average depth of about two inches. Due to the uneven character of the bottom of the large reservoir, a thorough cleansing was not accomplished until about noon on October 9th. At this time the small distributing reservoir was filled to the overflow. It is reported by the water works superintendent that the large reservoir was cleaned during the summer of 1913.

The supply from Stony Point dam was turned into the large distributing reservoir at this time and the copper sulphate apparatus moved back to its original location, treating all the water delivered into the large distributing reservoir. At eight A. M. on October 10th the small reservoir had been drained and the large reservoir had filled up to a point about five feet below the overflow. At this time the large reservoir was also connected to the distributing system and at four P. M. on the same date both reservoirs were full, the entire supply up to this time being obtained only from the Stony Point dam. Due to the waste of the water in cleaning both the large and small distributing reservoirs, the elevation of the water surface in the Stony Point impounding dam dropped to a point about five feet below the spillway. Water from the Stony Point dam was used exclusively up to seven A. M. October 14th, at which time the surface of the water level in the Stony Point dam was nine feet below the spillway. At this time, under instructions from Mr. C. A. Emerson, Jr., the supply from the Cleversburg dam was turned into the large distributing reservoir in addition to the flow from the Stony Point dam and the chemical apparatus installed at the large distributing reservoir was moved to the end of the gravity line from the Cleversburg dam. At this time three pounds of copper sulphate were used at each of the storage dams and four pounds at the plant installed at the outlet end of the gravity supply line leading from the Cleversburg dam to the large distributing reservoir.

The flow of Whiskey Run supplying the Cleversburg dam is larger than that of Furnace Run feeding the Stony Point dam. After October 14th, the full capacity of the six-inch line leading from the Cleversburg dam to the reservoir was used and the valve on the twelve-inch line leading from the Stony Point dam to the reservoir was kept throttled, so as to deliver from this source only enough water to keep the distributing reservoirs full. The surface of the water level in the Stony Point dam slowly rose, gaining eighteen inches by ten A. M. on October 18th, when the surface of the water in the distributing reservoirs was almost up to the overflow, showing that the shut-off valves on the Stony Point gravity line had been set at such a point as to nearly equal the consumption.

An effort was made by personal interview with the physicians to get a list of those sick and to institute precautionary measures at each such home so that we might protect other members of the household should typhoid be developing, and it is but fair at this point to record the Department's appreciation of the hearty cooperation of the physicians of the borough in every particular. In each instance the doctors gave a list of such persons to the visiting nurses or the Department's medical representatives where sickness existed and where the individual showed the slightest symptoms of typhoid fever. The nurse in every instance was freely admitted into the home and all precautions taken in the way of disinfection of excreta and its proper disposition, boiling of the bedding, cleansing and disinfection of the hands of the nurse, and exclusion of flies from the sick room just as if typhoid were developing. In a number of instances the primary cases did not prove to be typhoid fever, but in all of the remaining cases the precautionary measures prevented second cases in the household. It is doubtful if the Department in any previous epidemic has had the same early cooperation of the physicians, and it is due not only to the very active cooperation during the epidemic but to the early reporting of the first case of Dr. McCreary that we were able to limit the infection to so small a number of persons and to get the epidemic so quickly under control. Another avenue of cooperation by the physicians and citizens deserves special mention, namely, that of administration of typhoid vaccine. Three days after the Department's representatives arrived typhoid vaccine was placed in the hands of the Department's distributors of biological products, Fleming and Fleming. Special blank forms were prepared for physicians to sign so that vaccine might be given free to all persons who were unable to pay for it and to those who because of the expense of administration refrained from using it. A total of 178 persons were thus vaccinated and in all probability some of them would have contracted the disease had this immunizing agent not have been given.

The various charitable and philanthropic agencies of Shippensburg showed the most active and hearty cooperation with the nurses in supplying the needs of the borough. This is particularly true of the Civic Club. Almost every day some particular need was supplied by some of these organizations, and in another section of this report will be found a tabulated list of the work done by the visiting nurses and an approximate list of the things supplied through the Civic Club, the Needle Work Guild and other agencies.

The Source of the Infection. In studying the influence of water as the probable source of infection but little definite bacteriological evidence could be secured. The evidence gathered in our hasty summary was so overwhelmingly against water that it was immediately treated. Samples had been collected and were sent to the laboratory

prior to the treatment, but through a misunderstanding in the laboratory, because of the samples being shipped in containers not supplied by the Department, analysis was not undertaken. Subsequent samples after the treatment, as would have been expected, showed for the most part negative results. Evidence of sewage pollution was found, however, in one of the dead ends where the bactericide would be slow in reaching the supply and from the mud in the bottom of the reservoir.

Samples of water from the public supply for bacteriological examination at the Department's Laboratory were collected first on September 29th, and the collections were continued every day or two during the prevalence of typhoid fever and at less frequent intervals throughout the remainder of the year. A number of samples were taken from private water supplies. Also samples of mud were collected at the time of cleaning the reservoirs. In all, 130 samples were examined, 108 of the public water supplies, 10 of reservoir mud and 12 of private water sources such as wells and springs. The samples obtained of the water flushed from fire plugs contained rather large numbers of bacteria in many instances, but colon bacilli in only one instance. Moreover, in only one instance was the presence of colon shown in a sample from a private house tap. Colon bacilli were present in the samples of mud from the bottoms of the reservoirs, but differential determinations did not reveal the presence of typhoid bacilli. Samples taken from a spring on West King Street showed evidence of sewage pollution, and the entrance to the spring house was closed at once and danger signs were posted.

The site of the camp which had been used by the foresters while setting out trees above the Cleversburg reservoir was inspected by the Department's representative on October 22nd, and it is estimated that the flow of Milesbrun Run at this time was approximately 10,000 gallons per day. The privy was filled with excrement to a depth of about 2½ feet. It had not been filled up with earth nor had the contents been disinfected. However, on October 22nd, the pit was disinfected with chloride of lime and filled up with earth. Samples of water collected from the run immediately below the privy on October 22nd did not reveal the presence of B. Coli.

Data relative to the past occurrence of typhoid fever among the workmen employed in planting the trees is given below:

No. 1. B. B. McC., State Forester, Shippensburg, no typhoid.
No. 2. J. S., Cleversburg, reports no typhoid fever during lifetime.
No. 3. R. A. H., lives on Baltimore Road near Cleversburg. Reports chronic stomach aches, but no typhoid fever during lifetime.
No. 4. B. H., son of above, reports no typhoid fever.
No. 5. D. L., Cleversburg, states that he has never had typhoid fever.
No. 6. J. A., Cleversburg, reports no typhoid fever.
No. 7. W. H., lives near Leesburg, reports no typhoid fever during lifetime.

No. 8. S. H., 1½ miles below Cleversburg dam, reports that he has never had typhoid fever.
No. 9. J. T., Fayette, R. F. D. No. 2, states that he has never been ill.
No. 10. J. W. T., Fayette, R. F. D. No. 2, states that with the exception of pneumonia he has never been ill.
No. 11. C. T., Fayette, R. F. D. No. 2, reports no sickness except pneumonia.
No. 12. A. M., Fayette, R. F. D. No. 2, reports no sickness except pneumonia.
No. 13. W. J. M., Fayette, R. F. D. No. 2, had typhoid fever at age of 12 years.
No. 14. G. B., Fayette, R. F. D. No. 2, reports no typhoid fever.
No. 15. C. B., Fayette, R. F. D. No. 2, reports typhoid fever thirty years ago.
No. 16. J. U., Fayette, R. F. D. No. 2, had typhoid fever ten or twelve years ago.
No. 17. H. P., Fayette, R. F. D. No. 2, stomach troubles but no typhoid fever.
No. 18. D. U., Fayette, R. F. D. No. 2, reports no typhoid fever.
No. 19. H. S., Fayette, R. F. D. No. 2, reports no typhoid fever.
No. 20. F. B., Fayette, R. F. D. No. 2, reports no typhoid fever.
No. 21. E. L., Fayette, R. F. D. No. 2, reports no typhoid fever.
No. 22. G. B., Fayette, R. F. D. No. 2, reports no typhoid fever.
No. 23. C. B., Fayette, R. F. D. No. 2, reports no typhoid fever.
No. 24. A. M., Fayette, R. F. D. No. 2, reports no typhoid fever.

Two other members of this camp, F. C. and C. C., have left the neighborhood, and no information up to the present time has been obtained concerning them.

Data relative to any previous occurrence of typhoid fever among the men employed on the highway above the Cleversburg reservoir follows:

No. 1. W. F. B., foreman, Shippensburg, had typhoid fever in 1863.
No. 2. H. A. N., Middle Spring Road, Newcomertown, had typhoid fever about 1907.
No. 3. Wm. D., Cleversburg, no sickness in family resembling typhoid fever. Had scarlet fever about 1904.
No. 4. S. H., lives along the stream below the Cleversburg dam and draws water therefrom for domestic use. Reports no sickness in his family, which comprises his wife and five children.
No. 5. C. W., lives near Cleversburg. There has been no recent sickness in his family and never a case of typhoid.
No. 6. E. R., Cleversburg. There has been no sickness in this family recently and never a case of typhoid fever.
No. 7. R. M., resides about one-half mile below the Cleversburg dam and reports no sickness of any kind in his family.
No. 8. S. L. B., Shippensburg, reports no typhoid fever during lifetime.
No. 9. A. W., Shippensburg, states that he has never been ill.
No. 10. B. O'D., Shippensburg, reports that he has never been ill.
No. 11. A. S. McC., Shippensburg. Mr. McC. had typhoid fever about 1898 and has always been sickly He reports no typhoid fever in the family other than his own case and also states that he had an attack of diarrhoea during the latter part of September, 1915.
No. 12. H. O., lives about 1½ miles east of Cleversburg and reports never having been ill.
No. 13. F. S., lives about 1½ miles east of Cleversburg. He had typhoid fever about 1909 and started to work for the Highway Department on

September first. The only sickness in his family was a case of pneumonia in 1914.

No. 14. J. B., Middle Spring Road, Newcomertown, had typhoid fever about 1895.

No. 15. F. O., living 1½ miles east of Cleversburg, reports that there has been no sickness of any kind in his family.

No. 16. C. S., Shippensburg, teamster. Worked but one day, that being September 30th.

No. 17. O. H., residing on the Baltimore Road below the dam, uses the public water supply. He has been working since September 15th and during the latter part of September was treated by Dr. McCreary for stomach trouble. He did not, however, discontinue his work.

No. 18. R. D., Shippensburg, reports that he has never been sick.

Of the above number only the first eight men were employed during the period August 4th to 15th, when they worked on the Big Flat at the extreme limits of the shed about 3½ miles above the dam. An exceptionally heavy rain or cloudburst occurred in Shippensburg and vicinity on August 15th, and it is reported that this rain did not cause the waters in the distributing reservoirs to become turbid.

On October 6th, in response to instructions from Geo. H. Biles, Second Deputy State Highway Commissioner, Wm. S. Hammacher took up the matter of nuisances committed by the highway laborers working on the watershed above the Cleversburg dam and stated that on October 4th W. F. Barbour, foreman, had been instructed to provide a pit for the convenience of his men at a safe distance from the stream and that this pit was to be conscientiously used and all excrement buried. Prior to this time stools were deposited on the sloping hillsides, and no protective measures were taken to prevent drainage of this matter to the waters during heavy rains.

The State Forestry Department, on October 29th, 1915, arranged to revoke all permits for hunting on the drainage areas furnishing the Shippensburg water supplies and to grant no additional permits except in instances where parties have constructed permanent buildings on private tracts where proper disposal is to be made of all sewage, garbage and other wastes. The Cleversburg Gun Club, composed of men from Shippensburg and Cleversburg, who have long camped above the Cleversburg dam, will probably be the largest of these camps. The temporary camps established on public property for short periods and difficult to supervise from a sanitary standpoint and, therefore, a grave menace to the water supply in the past, will be eliminated in the future.

By examining the dates of onset it will be seen that the bulk of the cases sickened between the 18th of September and the 5th of October, the greatest number sickening on the 24th and 25th of September. This would make it appear that the height of the pollution of the water occured about September first, and is in harmony with the facts concerning heavy rainfall on the watershed at about that

time. If infection of the water supply occurred through this heavy rainfall, the water used for several weeks thereafter probably would have become polluted and would have remained polluted until sedimentation had taken care of it in the reservoir, or until the distribution mains had been emptied.

TABLE I.

Dates of Onsets.

Date.	Cases.	Date.	Cases.	Date.	Cases.
Aug. 30,	1	Sept. 20,	5	Oct. 5,	2
Sept. 1,	2	21,	4	6,	4
2,	1	22,	4	9,	2
3,	1	23,	5	10,	1
4,	1	24,	9	13,	1
7,	1	25,	9	17,	1
8,	1	26,	4	18,	1
10,	2	27,	2	22,	1
12,	2	28,	4	25,	2
14,	1	29,	4	31,	1
15,	1	30,	5	Nov. 2,	1
16,	1	Oct. 1,	6		
17,	2	2,	3		
18,	3	3,	4		
19,	2	4,	4	Total,	111

The distribution of patients by age periods shows nothing out of the usual.

TABLE II.

Age Periods.

	Total.	Male.	Female.		Total.	Male.	Female.
0- 4,	6	2	4	50-54,	3	0	3
5- 9,	9	6	3	55-59,	1	0	1
10-14,	19	8	11	60-64,	1	1	0
15-19,	22	16	6	70-74,	1	1	0
20-24,	22	12	10				
25-29,	9	5	4				
30-34,	7	2	5				
35-39,	4	4	0	Age not given,	1	1	
40-44,	4	2	2				
45-49,	2	0	2	Total,	111	60	51

The milk supply for the borough of Shippensburg and the built-up adjacent districts came largely from two sources,—Reeder's dairy, which supplied a fairly high grade pasteurized milk, and Fogelsanger's retail supply, securing their supply from farms showing no evidence of typhoid fever. In order to rule out the possibility of typhoid on any of these milk producing premises, dairy inspection was performed on every farm supplying milk to either source. The physical conditions on some eighteen dairy farms were studied in determining the probable influence of the milk supply. It will be noted that in

fifteen instances milk was supplied by the family's own cow, in seven instances from miscellaneous dairies, in four instances no milk was used, and in two instances milk was used from two sources.

TABLE III.

Milk.

Reeder's,	65	Martin's,	1
Fogelsanger's,	9	Reeser's,	2
Reeder's and Fogelsanger's	2	Various,	1
Burkholder's,	3	Neighbor's,	1
Own cow,	15	Miller's,	1
None,	4	Smith's,	2
Roxbury,	1		
Cressler's,	4		111

A great deal of difficulty was encountered in determining the source of ice cream. The cream used in the making of the ice cream came from many different sources. The ice cream used came from the Harrisburg Milk Products Company of Shippensburg, receiving milk and cream from about two hundred farms, and the Cumberland Valley Creamery Company of Chambersburg, receiving milk from an equally large number of premises, and from the farm of Harper Mains just outside of Shippensburg. It was not possible to make a detailed inspection of each of these farms, but as the analyses of the epidemiological data proceeded and as the cases were checked up against the various ice cream supplies, it was comparatively easy to rule out ice cream as a common factor in the dissemination of the infection. Some twenty-seven of those sickening with the disease used no ice cream during the probable infective period, and various supplies were reported as the only sources of ice cream as set forth in the table.

TABLE IV.

Ice Cream.

Angles,	19	Stover's Drug Store,	2
Etters,	17	Hershey,	1
None,	27	Fleming's Drug Store,	1
Miscellaneous,	7	Palace Confectionery,	2
Not known,	11	At home,	1
Etters and Angles,	5	Raum's Drug Store,	2
Fogelsanger,	5	Metz Drug Store,	1
Lehman,	3	Plymira,	1
Walter's stand,	2		
McClay's Lunch Room,	3		111
Fogelsanger and various,	1		

In studying the influence of vegetables on the probable dissemination of the disease, it was equally easy to rule out these articles of diet as factors in the dissemination of the disease. Some thirty-six of those sickening used no raw vegetables.

TABLE V.

Vegetables, Etc.

Only cooked vegetables,		36
Uncooked vegetables,		47
Home grown,	29	
In market,	18	
Peaches and other fruits,		15
Not known,		13
		111

TABLE VI.

Occupations.

School,	40	Painter,	1
Under school age,	9	Banker,	1
Laborer,	17	Shoemaker,	1
Housewife,	17	Photographer,	1
Teacher,	4	Railroad employe,	1
Insurance agent,	1	Grocer,	2
Clerk,	3	Seamstress,	1
Printer,	1	No occupation,	2
Maid,	2	Not given,	5
Barber,	1		
Knitting mill,	1		111

TABLE VII.

Distribution of Cases in Shippensburg and Vicinity.

Shippensburg Borough,	69
Shippensburg Township,	18
Southampton Township (Cumberland County),	6
Southampton Township (Franklin County),	7
Newton Township,	3
Lurgan Township (Franklin County),	2
Antrim Township (Franklin County),	1
Hopewell Township,	1
Centre Township,	1
Newburg Borough,	1
Shippensburg, R. D.,	1
Virginia,	1
	111

It will be seen by consulting the distribution of cases that the cases were distributed in Shippensburg Borough, Shippensburg Township, Southampton Township, Cumberland County, Southampton Township, Franklin County, and in Newton Township, and in the territory adjacent. The other persons in remote districts visited in Shippensburg—one patient from Virginia having spent a week in Shippensburg and sickened in Virginia at about the time the bulk of the cases sickened in Shippensburg Borough.

Summary of Social Work.

The work of the Department's nurses was invaluable in rendering aid to the poor who were afflicted with typhoid fever, and was almost equally valuable in aiding mothers and good-sense nurses in teaching them methods of protecting themselves and others in the family even though they were able to pay for all service rendered. Ninety-eight patients were visited by the nurses; eleven of them were persons slightly ill but not developing typhoid fever. Eigty-seven suffered from an attack of the disease. A total of 653 visits was made, eighty-seven baths were given for the reduction of temperature, sixty-five for the purpose of cleansing.

In the distribution of supplies received from the Civic Club and Needle Work Guild, a total of $60.00 was expended in money for the purpose of collecting coal, food and paying for laundry; thirty-two sheets, fifty-five towels, twenty-eight pillow slips, seven blankets, twenty-six suits of winter underclothing, bed springs, shoes, and many other donated articles, together with a large amount of suitable sick room diet were distributed by the nurses into the homes where such things were badly needed.

It is of considerable interest to note the symptoms developing in persons immunized against typhoid fever. The vaccine used was prepared by one of the commercial houses making a specialty of such preparations and was essentially the method used in the Federal Army, that of giving the first dose of five hundred million dead typhoid bacilli, and at intervals of a week the second and third doses each of one thousand million. The physicians were asked to give us data concerning all cases immunized, the blank form used in collecting this data and summarized answers, reading as follows:

COMMONWEALTH OF PENNSYLVANIA.
DEPARTMENT OF HEALTH.

Division of Medical Inspection.

Clinical Notes on Typhoid Immunization.

LOCALIZING SYMPTOMS.

PAIN,	None,	60	
	Slight,	114	
	Moderate,	4	
	Severe,	0	178
TENDER REGIONAL GLANDS,	No,	100	
	Yes,	78	178
REDNESS SITE OF INJECTION,	None,	59	
	Slight,	119	
	Marked,	0	178
SWELLING,	None,	85	
	Slight,	88	
	Marked,	5	178

LOCAL NECROSIS,	No,	178	
	Yes,	0	178

GENERAL SYMPTOMS.

	None,	133	
HEADACHE,	Slight,	45	
	Severe,	0	178
	None,	161	
BACKACHE,	Slight,	17	
	Severe,	0	178
	None,	153	
PAIN EXTREMITIES,	Slight,	25	
	Severe,	0	178
	None,	168	
PAIN JOINTS,	Slight,	10	
	Severe,	1	178
VOMITING,	No,	176	
	Yes,	2	178
DIGESTIVE DISTURBANCES,	No,	174	
	Yes,	4	178
DIARRHOEA,	No,	175	
	Yes,	3	178
	None,	159	
CHILLINESS,	Slight,	19	
	Marked,	0	178
FEVER,	None,	130	
	100° or more,	48	178
SWEATS,	No,	171	
	Yes,	7	178

The first section of the form giving the purely localizing symptoms, the second section of the blank giving the general symptoms.

It is of considerable interest to note that of the 178 persons injected, no one is recorded as having had severe pain at the site of injection; that seventy-eight of them had tender regional glands; that 119 had redness at the site of injection; that eighty-eight are recorded as having some swelling at the site of injection, five of them marked; and that not a single case developed any form of local necrosis.

Out of the total 178, forty-five were recorded as having had headache, following injection; seventeen backache; twenty-five pain in the extremeties; ten pain in joints; two had vomiting; four were reported as having digestive disturbances; three diarrhoea; nineteen slight chilliness; forty-eight had fever of one hundred degrees or more; and seven of them reported sweats following injections.

A matter of a great deal of interest to the physicians was the observation in pregnant women who were immunized. Dr. Bruce McCreary immunized pregnant women, and concerning these cases he states that in not one of them did he meet with any unusual reactions or symptoms. In several of Dr. McCreary's cases were men

who were handling trucks and doing heavy lifting. The reaction and the slight localizing symptoms in these cases were believed by him to be due to the exercise. Several cases sickened with typhoid fever after the second injection. One case, a man of fifty years, developed a severe attack of typhoid fever after the third injection. The course of the fever in these cases was believed to be influenced by this injection, the temperature range being shorter than in those not having had anti-typhoid vaccine.

It is probable that some who were immunized with the State's vaccine could have paid for the materials, but it was felt to be the part of wisdom to encourage anyone to take it who might delay because of the cost of the materials.

Nothing of particular interest was developed in the tabulating of age and sex conditions of those immunized.

TABLE VIII.

Age and Sex Tables.

	Total.	Male.	Female.		Total.	Male.	Female.
0- 4,	5	3	2	35-39,	13	8	5
5- 9,	16	9	7	40-44,	15	5	10
10-14,	26	10	16	45-49,	10	5	5
15-19,	19	5	14	50-54,	6	3	3
20-24,	15	7	8	55-59,	1	0	1
25-29,	30	14	16				
30-34,	22	11	11	Total,	178	80	98

Summary.

One hundred and two persons sickened in Shippensburg and in the townships immediately adjacent to Shippensburg (practically parts of Shippensburg) during the months of September and October, 1915, all of whom probably received their infection through the water supply of Shippensburg. Eight additional persons who had used Shippensburg water sickened in other sections of Pennsylvania, and one such person sickened in Virginia, all having partaken of water at intervals of from two weeks to eighteen days prior to showing symptoms of the disease. That the water supply was responsible for the epidemic is beyond question.

It is doubtful if in any community heretofore the same degree of cooperation was secured by physicians in giving provisional diagnoses early in the disease of all persons sickening, and certainly in no community has the assistance given by Department nurses been so highly appreciated nor have those interested in social work shown greater appreciation of the assistance of the nurses or given proportionately greater assistance to the community than was received in Shippensburg.

Shippensburg has experienced a typhoid fever outbreak each fall for the past few years, and the conditions point to the Cleversburg water supply with grave suspicion. It is imperative that the chemical germicide treatment of the water supplied be continued under conscientious responsible supervision during the hunting season and continuously in the case of the Cleversburg supply until a permanent remedy is effected.

The approval of the water works granted by this Department stipulated that the borough make bi-monthly bacteriological examinations of the water supply and file copies of the results in the office of the State Department of Health, and further that it keep reports of the operation of the system and file copies monthly in the office of that Department. Also it is required that the borough make monthly sanitary inspections of the drainage areas and of all camps and habitations so as to prevent any pollution of the waters. The borough has utterly failed to live up to these requirements in the past, except that the construction camp for the time was under sanitary supervision.



SPECIAL REPORTS.

13—16—1918

ANNUAL REPORT OF THE GENERAL INSPECTOR.

By C. W. WEBBERT.

As in former legislative years, the time of the General Inspector for the first six months of the year 1915 was largely taken up with legislative work, reviewing all bills relating to the health of the people of the State.

The Session of 1915 was one of special importance in public health work and there was manifest in both branches of the legislature increased interest in health measures. All of the bills which came before the legislature with the approval of the Department of Health were passed without opposition, while a few that would have been detrimental from a public health standpoint did not receive any considerable support from the legislature. It is gratifying to note that anti-vivisection and anti-vaccination bills had apparently fewer supporters than at preceding sessions. This may be accounted for by the general and very successful use of biological products in the prevention and cure of diseases heretofore beyond the help of the medical profession.

Many important public health measures were passed by the legislature and approved by the Governor.

Townships of the first class, having only been created in late years, had not received the same consideration by our lawmakers as had cities and boroughs, the older municipal forms of government. Townships of the first class were authorized to provide, regulate and protect a system of water supply, and also were given the privilege of contracting with adjoining municipalities for a supply of water in cases where the circumstances would not justify a township in erecting its own plant. They, however, like other municipalities, are required to file plans with the Department of Health and to obtain a permit from the Commissioner of Health in accordance with the provisons of the Act of April 22, 1905.

A number of the boroughs of the State felt that the Board of Health Law of June 12, 1913, did not sufficiently provide for the adoption of additional rules and regulations and their enforcement by the local boards of health. This act was amended making more definite provisions for the enforcement of such rules and regulations and providing that when approved by the borough council and burgess and advertised, they should have the force of ordinances.

The organic State Quarantine Law, under which health authorities were working prior to 1915, became effective in 1909. After a prac-

tical experience of six years, certain changes and additions seemed advisable. The legislature enacted a new quarantine law, repealing and replacing the old one, in which were incorporated improvements which practical experience had suggested. More positive provisions were made for the time for which certain diseases should be quarantined and more definite restrictons as to those suffering from communicable diseases or living on premises where such diseases existed. School teachers are required to report any unusual rash or skin eruption, sore throat, symptoms of whooping cough, or any disease of the eye. More definite provisions are made in the new law for its enforcement and for the imposition of penalties for its violation.

For quite a while our people, and especially those whose business or profession required them to travel, were asking for State regulation of hotels and public eating houses from a general public health standpoint. Some legislation of this kind had become very necessary, and this need was met at least in part by the enactment of a law prohibiting the employment in hotels and public eating places of persons suffering from certain communicable diseases, and providing for the inspection of such places and employes. In order to carry out the provisions of this act, a new division has been established in the Department of Health, known as the Division of Public Service. Copies of the act and literature in reference thereto have been widely distributed throughout the State. Blanks for examining employes have been prepared and furnished local authorities, and a systematic inspection by the Department's health officers and health officers in cities, boroughs and first class townships is under way.

In some of the counties of the State numerous small municipalities have been established in close proximity to each other, frequently on the same watershed and along the same stream. For each of these to establish and maintain a separate system of sewage disposal to protect the purity of the water of the same stream might be expensive and might be a burden at least upon the poorer municipalities. In order to provide a means by which sewage from the entire district might be collected and economically treated, an Act of Assembly was passed permitting a county to construct, maintain and operate trunk sewers and sewage disposal plants, bringing together into this trunk sewer sewage outflow from all of the municipalities in the county or in that particular part of the county which the trunk sewer is intended to accommodate.

The Vital Statistic Law of the State had been adopted the same year that the Department of Health was created. Several amending acts had somewhat confused the fees to be paid for local registrars. Certian provisions in the Act of 1905 related to the formation of a new system for the collection of statistics and after the Division had been fully organized were no longer operative and were somewhat

confusing, so much so that differences of interpretation resulted in tedious litigations in the courts in order that uncertainties in the former act might be removed and the fees adjusted. A new Vital Statistic Law was enacted repealing the former Act of 1905.

Other Acts of Assembly having more or less bearing upon public health activities were passed and approved as follows:

(a) Act of March 31, 1915, authorizing certain cities of the third class to extend the municipal water pipes beyond the city limits and to supply water.

(b) Act of April 28, 1915, conferring authority upon county commissioners to appropriate money for the maintenance of indigent residents who are patients under treatment for tuberculosis in hospitals or sanatoria established for this purpose in any poor district of any county.

(c) Act of May 11, 1915, authorizing boroughs to collect an annual rental from property abutting on sewers.

(d) Act of May 14, 1915, amending and supplementing the Act for the Promotion of Medical Science by the distribution and use of unclaimed human bodies for scientific purposes, etc.

(e) Act of May 14, 1915, amending the Mattress Act of May 1, 1913, by requiring second-hand mattresses to be sterilized and labeled, and applying the provisions of the act to the leasing as well as to the sale of mattresses.

(f) Act of May 28, 1915, authorizing the Commissioner of Health to accept private donations for the purpose of erecting Union Chapels at the Tuberculosis Sanatoria—Cresson and Hamburg.

(g) Act of May 28, 1915, amending the Marriage License Law by providing for the temporary appointment of a guardian for a minor who has no guardian and, therefore, no legal way of securing a marriage license.

(h) Act of June 1, 1915, prohibiting the erection of community mausoleums in cities of the second class.

(i) Act of June 1, 1915, providing for the collection of moneys due the Commonwealth for the maintenance of persons in various institutions of the Commonwealth who are able to pay.

(j) Act of June 4, 1915, amending the Nurses' Registration Law, providing that all records shall be kept in the office of the Commissioner of Health.

(k) The Act of June 15, 1915, relating to the indebtedness of municipalities incurred in the construction of water works and other public improvements.

In addition to these Acts of Assembly relating to public health work, certain rules and regulations were adopted by the Advisory Board of the Department at its annual meeting on the 14th day of

January, 1915. These rules and regulations were adopted by authority of the Act of April 27, 1905, and are enforceable by all health authorities in the State. They are as follows:—

"No firm, person, or corporation shall expose for sale on any sidewalk or pavement or other exposed place any fruit, vegetable, or other article of food which are eaten uncooked, unless such fruit, vegetables, or other articles of food are thoroughly screened and protected from flies and unless they are on elevated stands at least twenty-four inches above the level of the sidewalk or pavement.

"Every physician practicing in any portion of this Commonwealth, who shall treat or examine any person suffering from, or afflicted with, paratyphoid fever, anthracosis, arsenic poisoning, brass poisoning, carbon monoxide poisoning, lead poisoning, mercury poisoning, natural gas poisoning, phosphorus poisoning, wood alcohol poisoning, naphtha poisoning, bisulphide of carbon poisoning, dinitrobenezene poisoning, caisson disease (compressed-air illness), shall if said case shall be located in a township of the first class, a borough, or a city, forthwith make a report in writing to the health authorities of said township, city or borough; and, if said case shall be located in a township of the second class, or a city, borough or township of the first class not having a board of health or body acting as such, to the State Department of Health."

While all of the important health laws submitted to the 1915 Session were passed by the legislature and approved by the Governor, the Department did not have quite the same encouragement in the matter of appropriations for its work for the two years beginning June 1, 1915. Owing to a lack of funds, some considerable reductions were made in the Department's budget, notably on Tuberculosis work, in Medical Inspection of Schools and the Bureau of Housing.

In the case of the Medical Inspection of Schools, the school law requires the Commissioner of Health to make certain medical and sanitary inspections in the fourth class school districts. These inspections have been made as economically as is at all consistent with good work, and if the law is complied with, the amount finally appropriated for this purpose will not suffice and there will be a deficit in this fund.

The appropriation to the Bureau of Housing was so reduced as to forbid any State-wide campaign for the enforcement of the law, and up to the present time the Commissioner of Health has been compelled to continue with an insufficient force the study of housing problems, enforcing the law only in the most grave cases which come to his knowledge, awaiting more general action in this important branch of the Department's work when sufficient funds are appropriated.

During the year 1915, and especially the latter half of the year, the General Inspector continued following up the work of local boards of health, which was actively begun after the passage of the Act of June 12, 1913.

At the beginning of the year 1915, there were one hundred and fifteen boroughs in the State which did not have boards of health.

This list was composed largely of very small boroughs in many of which the establishment of an efficient board seemed almost impossible. In many instances repeated efforts had been made by the president of council without success. During the year 1915, however, new boards were established in twenty-two of these boroughs and townships as follows:

Allegheny County:—Braddock Township. *Armstrong County:*—Atwood, Johnetta. *Berks County:*—Bernville. *Bucks County:*—Chalfont. *Cambria County:*—Ebensburg. *Clarion County:*—Callensburg. *Clearfield County:*—Grampian, Mahaffey. *Crawford County:*—Woodcock. *Huntingdon County:*—Saltillo. *Lawrence County:*—Enon Valley. *Lebanon County:*—Jonestown, Myerstown. *Lycoming County:*—Hughesville. *Mercer County:*—Stoneboro. *Northampton County:*—Wilson Township. *Tioga County:*—Tioga. *Washington County:*—East Washington. *Westmoreland County:*—Arnold, Donegal. *York County:*—Cross Roads.

During the year 1914, the Department, under authority of the Act of June 12, 1913, found it necessary from time to time to take charge of certain boroughs and one township. A few others were taken over during 1915, up to about October 1, at which time bills were rendered to the several boroughs for expenses incurred by the Department of Health in the performance of public health duties.

The bills so rendered were as follows:—

New Oxford,	Adams County,	$35 94
Shippingport,	Beaver County,	9 53
Bechtelsville,	Berks County,	43 53
Langhorne,	Bucks County,	6 00
Loretto,	Cambria County,	23 95
Elverson,	Chester County,	24 93
Burnside,	Clearfield County,	7 04
Wallaceton,	Clearfield County,	47 52
Elgin,	Erie County,	8 35
Girard,	Erie County,	56 88
Platea,	Erie County,	25 47
Broad Top City,	Huntingdon County,	21 65
Mill Creek,	Huntingdon County,	24 72
Shelocta,	Indiana County,	12 25
Jonestown,	Lebanon County,	3 00
Myerstown,	Lebanon County,	2 00
Duryea,	Luzerne County,	176 98
Walnutport,	Northampton County,	88 93
Wilson Township,	Northampton County,	151 31
Girardville,	Schuylkill County,	300 94
Port Clinton,	Schuylkill County,	10 59
Addison,	Somerset County,	18 45
Somerfield,	Somerset County,	33 75
Ursina,	Somerset County,	2 00
Stoyestown,	Somerset County,	36 00
New Berlin,	Union County,	7 00

Polk,	Venango County,	28 32
Pleasantville,	Venango County,	1 50
Rouseville,	Venango County,	20 20
Bear Lake,	Warren County,	58 00
Columbus,	Warren County,	2 00
North Bellevernon,	Westmoreland County,	4 85
Winterstown,	York County,	5 75

Up to the 31st of December the bills so rendered had been paid by the following boroughs:—

Port Clinton.	Platea.	Winterstown.
Elverson.	New Berlin.	Columbus.
Myerstown.	Polk.	New Oxford.
Bechtelsville.	Shelocta.	Girard.
Langhorne.	Stoyestown.	Ursina.
Jonestown.	Elgin.	Walnutport.
Mill Creek.		

During the months of October and November a careful canvass was made of the various boroughs and townships which were reported as having boards of health, for the purpose of ascertaining whether these boards were active and efficient. As a result forty-nine were found in which the boards of health were inactive and not properly performing their duties. It was gratifying to note that out of the 129 boards which were established in 1914, only eight were found that apparently were not performing their duties.

By order of the Commissioner of Health, a large number of those boroughs not having efficient boards of health were taken in charge during the last few months of 1915, so that on December 31st the Department was in charge of the following:—

Adams County:—New Oxford. *Beaver County:*—Frankfort Springs, Hookstown, Glasgow, Georgetown, Homewood, New Galilee. *Bedford County:*—Bedford, Schellsburg, Woodbury, Coaldale, New Paris, Rainsburg. *Berks County:*—Bechtelsville, Centreport. *Bradford County:*—Alba, Monroe. *Bucks County:*—Langhorne Manor, Ivyland, South Langhorne. *Butler County:*—Cherry Valley, Portersville, West Sunbury, Fairview, Petrolia. *Cambria County:*—Cassandra, Loretto. *Cameron County:*—Driftwood. *Carbon County:*—East Side, Weissport. *Chester County:*—Elverson. *Clarion County:*—Strattonville, Curllsville. *Clearfield County:*—Burnside, Chester Hill, Glen Hope, Troutville, Wallaceton, Newburg, New Washington, Westover, La Jose. *Clinton County:*—Beech Creek. *Crawford County:*—Centreville, Spartansburg, Venango, Conneaut Lake, Geneva, Saegertown. *Erie County:*—Albion, Elgin, Girard, Platea, Waterford. *Greene County:*—Rice's Landing, Greensboro, Jefferson, Mt. Morris. *Huntingdon County:*—Broad Top City, Cassville, Mill Creek, Shade Gap, Coalmont, Shirleysburg. *Indiana County:*—Jacksonville, Mechanicsburg, Armagh, Plumville. *Jefferson County:*—

Summerville. *Lackawanna County:*—Dickson City. *Luzerne County:*—Avoca, Duryea, Conyngham, New Columbus, Laflin. *Mifflin County:*—Newton Hamilton. *Northampton County:*—Roseto, Walnutport. *Perry County:*—New Buffalo. *Schuylkill County:*—Girardville, Port Clinton. *Snyder County:*—Middleburg. *Somerset County:*—Shanksville, Somerfield, Stoyestown, Addison, Ursina. *Tioga County:*—Elkland. *Union County:*—Harleton, New Berlin. *Venango County:*—Polk, Pleasantville, Siverly, Rouseville, West End. *Warren County:*—Grand Valley, Bear Lake. *Washington County:*—Speers, West Middletown, Finleyville, Dunlevy, California, Beallsville. *Westmoreland County:*—Bolivar, East Vandergrift, Livermore, Madison, Avonmore. *Wyoming County:*—Meshoppen. *York County:*—Jefferson, Loganville, Railroad, Winterstown, East Prospect, Yorkana.

On December 31, 1915, there remained without boards of health the following boroughs and townships which had not yet been taken in charge, many of which will likely be taken over early in the year 1916:—

Allegheny County:—Ben Avon Heights, Cheswick, Elizabeth, Leet Township, Lower St. Clair Township, Mt. Lebanon, South Versailles, Westwood. *Armstrong County:*—Wickboro. *Bucks County:*—Attleboro, Silverdale. *Butler County:*—Evansburg, West Liberty. *Cambria County:*—Daisytown. *Columbia County:*—Orangeville. *Cumberland County:*—Shiremanstown. *Jefferson County:*—Big Run, Falls Creek. *Lackawanna County:*—Gouldsboro. *Lawrence County:*—South New Castle. *Luzerne County:*—Newport Township. *Mercer County:*—Sandy Lake, West Middlesex. *Montgomery County:*—Bala, Pennsburg, West Telford. *Northumberland County:*—Turbotville. *Pike County:*—Milford. *Somerset County:*—Benson, New Baltimore. *Sullivan County:*—Eagles Mere, Laporte. *Susquehanna County:*—Little Meadows. *Warren County:*—Clarendon. *Washington County:*—Deemston, Long Branch. *Westmoreland County:*—Adamsburg, New Alexandria, Southwest Greensburg. *Wyoming County:*—Nicholson. *York County:*—Felton, New Salem, Stewartstown.

The majority of these municipalities are small in population, the most important ones being in Allegheny County, where a peculiar condition exists.

It has been the practice to detail the nearest township health officer to take charge of the boroughs and townships of the first class which are without local boards. In many instances we have a health officer residing in the municipality itself. In Allegheny County, however, the boroughs and first class townships are located in what is known as the Pittsburgh district, which covers about half the county area with the city of Pittsburgh as the center, and all of the Department's health officers are located outside of this district.

rather along the boundaries of the county, and are not so located that they could be detailed to do the work in the boroughs and townships of the first class which are without local boards. If these are to be taken in charge, it will be necessary to appoint special health officers to do the work.

The Department had few prosecutions during the year 1915. Several, however, were of special interest.

In the case of the Commonwealth *vs.* Quarrels, in Westmoreland County, the defendant, Quarrels, was caught dumping a wagon load of night-soil into a stream. He was convicted by the court of having violated the "Purity of Waters Act of 1905." This case was not based upon any notice served by the Department of Health or upon a refusal to obey the Departments' orders, but upon an overt act without notice.

In Washington County, a bill in equity was filed against the county at the relation of the Commissioner of Health, praying the court to order the county to cease discharging sewage from county buildings into streams. This was the first case of the kind in which a county appeared as a defendant. The court upon hearing the case issued a decree directing the county officials to comply with the orders of the Department.

In a case in Delaware County, in which a prominent Life Insurance Company was the defendant, the Commissioner of Health was subpoenaed *duces tecum* by the defendant company to produce certain records from the Chester Dispensary in evidence. The Commissioner appeared in court upon the trial of the case with the Hon. Joseph L. Kun, Deputy Attorney General, declining to produce the records in question, for the reason that under the law as custodian of such records he had a right to refuse to produce them when in his opinion such action would be prejudicial to public interests. The court, Judge Isaac Johnson presiding, after hearing the arguments on the part of the Deputy Attorney General and counsel for the Insurance Company, sustained the contention of the Commissioner of Health and refused to order the records to be produced. This legal question had been raised many times before and this decision of the court of Delaware County is very valuable to the State.

In the case of the Commonwealth *vs.* Evans, referred to in our 1914 report, the Superior Court handed down a decision affirming the findings of the Court of Common Pleas of Lancaster County and sustaining in every particular the State Quarantine Law. This is the first decision of a higher court which we have had on the quarantine law and will be very useful in future prosecutions.

On the first of November, a system of daily reports, which was tried out experimentally in York County in 1913, was put into general effect, with the additional change suggested by the Auditor General in the form of a voucher used in making up monthly accounts.

During the year 1915 the General Inspector visited the following county medical inspectors:—

Dr. S. M. Rinehart (Allegheny); Dr. Bruce Snodgrass (Beaver); Dr. C. B. Wood (Washington); Dr. I. M. Portser (Westmoreland); Dr. O. R. Altman (Fayette); Dr. W. da la M. Hill (Bedford); Dr. W. E. Matthews (Cambria); Dr. E. C. Bray (Carbon); Dr. J. T. Butz (Lehigh); Dr. C. W. Schmehl (Warren); Dr. J. K. Roberts (Crawford); Dr. J. B. Strayer (Venango); Dr. S. C. Stewart (Clearfield).

Twelve special investigations were conducted regarding the work of health officers—one in Clearfield, one in Warren, three in Cambria, one in Blair, one in Crawford, one in Westmoreland, one in Washington, two in Bedford, one in Centre. In six of these investigations it appeared that the work of the health officer was not up to the Department's standard and that a new health officer should be secured, and the General Inspector so recommended.

Five investigations were conducted as to the work of medical inspectors of schools—two in Fayette, one in Jefferson, and two in Washington County, and two investigations as to the work of county medical inspectors.

In the month of December, a special investigation was made upon complaint of the secretary of the school board of Perry Township, Jefferson County. In the village of Valier, in Perry Township, the teachers in the public schools excluded from the schools children who did not have vaccination certificates. After these children were excluded, the parents secured a room and fitted it up with school furniture and employed a teacher, who at the time of the investigation had in her school twenty pupils who did not have vaccination certificates as required by law. This school, of course, is being operated directly in violation of the vaccination law which applies to private as well as to the public schools. This complaint having come from the local school authorities, by order of the Commissioner of Health, the necessary steps will be taken for either closing the school or compelling its pupils to comply with the vaccination law.

During the year 1915, the General Inspector visited the following boroughs and cities for the purpose of conferring with local health authorities as to the conditions in their several municipalities:—

Allegheny County:—Bellevue, Millvale, Etna, Swissvale, Crafton, Ingram, Ben Avon. *Beaver County:*—Rochester, Monaca, Shippingport. *Bedford County:*—Bedford, Everett. *Blair County:*—Roaring Spring. *Cambria County:*—Johnstown, Ebensburg, Barnesboro, Patton. *Carbon County:*—Mauch Chunk, East Mauch Chunk. *Centre County:*—Milesburg. *Clearfield County:*—Mahaffey, Clearfield. *Crawford County:*—Meadville, Cambridge Springs. *Elk County:*—Ridgway. *Erie County:*—Corry. *Fayette County:*—Brownsville,

Uniontown, Connellsville. *Franklin County:*—Chambersburg. *Jefferson County:*—Reynoldsville, Brookville. *Lehigh County:*—Slatington, Allentown. *Mercer County:*—Jamestown. *Venango County:*—Oil City. *Warren County:*—Warren. *Washington County:*—Monongahela, Canonsburg, Washington, California. *Westmoreland County:*—Latrobe, Irwin.

During the month of June, notices from fourth class school districts to the effect that resolutions not to have medical inspection for the ensuing year had been adopted, were received by the General Inspector, tabulated, indexed and filed. Although from 1911 to 1914 the number of districts refusing medical inspection had decreased from 1,617 to 219, we are pleased to report that there was still a further decrease in the number of refusals in 1915, only 175 such notices having been received.

During the year the General Inspector was absent from the Harrisburg office on outside duty sixty-four days, nineteen of which were spent in the Philadelphia office. During the year the expenses of these general inspections amounted to $464.26, the number of miles traveled, 8,589.



DIVISION OF MEDICAL INSPECTION.

B. FRANKLIN ROYER, M. D.,
Chief Medical Inspector.



DIVISION OF MEDICAL INSPECTION.

CONTENTS.

1. ORGANIZATION.
2. ADMINISTRATIVE WORK.
   Field Work.
   Infant Welfare Work.
   Revision of Circulars.
   Special Communications.
3. PREVALENCE OF CERTAIN COMMUNICABLE DISEASES.
   Quarantine Work.
4. SPECIAL REPORTS.
   Typhoid Fever:—Bloomsburg, G. K. Strode; Brookville and Summerville, G. K. Strode; Collegeville, H. L. Hull; Ridgway, H. L. Hull; Lewistown, Yeagertown, etc., H. L. Hull; York County, J. S. Miller.
   Diphtheria:—Oak Run School District, Lycoming County, C. J. Hunt; Sunbury, C. J. Hunt; DuBois and vicinity, G. K. Strode; Lykens Valley, Dauphin County, H. L. Hull.
   Poliomyelitis:—Erie and vicinity, Herbert Fox and Damaso Rivas.
   Smallpox:—Dickson City, H. L. Hull; Jessup, H. L. Hull and J. C. Reifsnyder.
   Scarlet Fever:—Gettysburg College, H. L. Hull; Lehighton, J. L. Mullowney.
   Chicken pox:—Bloomsburg, C. J. Hunt; Duncannon, C. J. Hunt.
   Whooping Cough (alleged):—Moore Township, Northampton County, H. L. Hull.
   Book Louse Nuisance:—Upper Paxton Township, Dauphin County, H. L. Hull.
5. INSPECTION OF SCHOOLS AND SCHOOL CHILDREN.
   Medical Inspection, Fourth Class Districts.
   Sanitary Inspection, Fourth Class Districts.
   Teachers' Return Reports.
   Medical Inspection, Third Class Districts.
6. ABSTRACTS OF THE REPORTS OF COUNTY MEDICAL INSPECTORS.
7. STATISTICS OF THE WORK OF COUNTY MEDICAL INSPECTORS.
8. STATISTICS OF THE WORK OF HEALTH OFFICERS.

ORGANIZATION.

No material change has taken place in the general organization of the Division of Medical Inspection since filing the last annual communication.

Dr. Charles Jack Hunt, who had been Associate Chief Medical Inspector in the Division of Medical Inspection since 1910, tendered his resignation in July and severed his connection with the Department on the first day of August. During Dr. Hunt's five years of service he performed a great deal of important inspection work in the Department and his resignation is a distinct loss. The position vacated by

the resignation of Dr. Hunt was filled by the appointment of Dr. Howard L. Hull. Dr. Hull reported for duty on the first day of November. Dr. Hull came to the Department after having had three years of service in the United States Army and having had previous to that time general hospital service and a year of special hospital service in contagious diseases in the Philadelphia Hospital for Contagious Diseases. In the interval between the resignation of Dr. Hunt and the appointment of Dr. Hull, Dr. George K. Strode acted as Associate Chief Medical Inspector from September 15th to November 1st, and did valuable service in the field.

Dr. Paul Allen, acting county medical inspector, filling the vacancy caused by the death of Dr. H. X. Bonbrake, for many years county medical inspector for Franklin County, died after a very short illness on the tenth of February. He was succeeded by Dr. John H. Kinter, of St. Thomas.

Dr. J. T. Iams, for many years county medical inspector for Greene County, died on the fifteenth of February. His son, Dr. S. H. Iams, was immediately appointed to act as county medical inspector and continues in this capacity.

Such minor changes as have taken place in the corps of stenographers and permanent clerks will be seen set forth in the general report of the Commissioner. The corps of temporary clerks was slightly increased owing to the increased number of school districts requiring medical inspection and to some slight change in the method of sending out reports concerning defective pupils.

ADMINISTRATIVE WORK.

FIELD WORK.

We have been fortunate throughout the Commonwealth during 1915 in not having any serious epidemics of communicable disease. A great amount of field work has been done, however, by various representatives of the Division, and owing to the change in the office of the Associate Chief Medical Inspector, a great deal more field work was required of the Chief Medical Inspector than for several years past.

Field work of considerable proportions was rendered in connection with epidemics of typhoid fever in the Allegheny Valley, in the vicinity of Kittanning, Ford City, New Kensington, Arnold, Parnassus, Oakmont, Verona, Etna and Penn Township. Here a series of interesting outbreaks of enteric fever occured, beginning in the latter part of 1914 with the Warren outbreak. The Kittanning, Ford City and other outbreaks came along at intervals of a month after each other, apparently a descending river infection. Special communications on this outbreak filed by the Engineering Division will be found of great interest. Other notable field work in typhoid fever was rendered in connection with a most interesting outbreak of some eighty cases in

Newport and vicinity. Two outbreaks of typhoid occurred at Danville, one in the Insane Hospital, a few miles above the borough, the other in the borough of Danville itself, special reports being filed by the Chief Medical Inspector. A small but interesting outbreak in Bloomsburg and small ones at Brookville and Summerville; a water-borne outbreak very clear-cut in character, at Shippensburg; one at Villa Marie School, West Chester, investigated by County Inspector Joseph Scattergood and Assistant Engineer Ennis; and a milk-borne outbreak in Abington, Cheltenham and Moreland Townships, with two separate outbreaks, are recorded.

Dr. Hunt, while Associate Chief Medical Inspector, investigated an interesting diphtheria outbreak in the Oak Run school district in Lycoming County in May. This special report contains some points of peculiar interest.

During August an undue prevalence of infantile paralysis was noted in Erie and vicinity, and after a conference with County Inspector J. W. Wright, the services of Drs. Herbert Fox and Damaso Rivas were secured to conduct both laboratory research and epidemiological research in Erie and vicinity. More than one hundred cases were investigated by these men and special reports filed covering the incidence of the disease and scientific work of epidemiological interest.

Help and advice were given the local board of health in Gettysburg and the officers of Gettysburg College in November, when an outbreak of scarlet fever occurred among the students in that college.

In June, Associate Chief Medical Inspector Hunt, assisted by County Inspector McKee, rendered valuable assistance in establishing the diagnosis and determining the source of smallpox in the borough of Kittanning, and in November similar service was rendered by Associate Chief Inspector Hull and County Inspector Reifsynder at Jessup, in Lackawanna County.

In October, Acting Associate Chief Medical Inspector Strode studied the prevalence of diphtheria among the schools of DuBois and vicinity and rendered valuable assistance to the local authorities.

Reports, giving in considerable detail the results of the epidemics investigated and the field work of considerable moment, will be found in the section of this communication devoted to special reports.

The various officers of this Division at different times represented the Department in local, state and national association meetings, and gave public addresses on numerous subjects throughout the year. References to these conferences and other instances in which the officers represented the Department will be found in the general report of the Commissioner.

The Chief Medical Inspector while representing the Department at certain national meetings spent considerable time in demonstrating

the exhibit of the Department at the Panama-Pacific Exhibition and for several months the Assistant Chief Medical Inspector gave full time to this work.

INFANT WELFARE WORK.

The Medical Division has continued rendering assistance to the various active agencies throughout the Commonwealth looking toward the lessening of infant mortality and improving conditions influencing infant health. Not quite as much work was done by officers of the Division during 1915 as during the preceding year, because of the absence in California for the greater part of the summer of the Assistant Chief Medical Inspector, and because of the changes in the position of the Associate Chief Medical Inspector. Among the more important exhibits that may be mentioned are Pittsburgh and McKeesport, where Dr. Hunt in cooperation with the local authorities rendered assistance, not only to the city of Pittsburgh but to McKeesport as well. The usual loan exhibit was sent to a number of communities and many talks were given in communities actively interested in welfare work by the Manager and Lecturer with the Department's various exhibits.

REVISION OF CIRCULARS.

Forms 1, 2, 3, 4, 5, 6, 8, 10, 15, 16 and 17 were revised during the year to make them harmonize with changes made by the passage of the Act of May 28, 1915, altering the quarantine periods and fixing in a more definite way the periods for return to school after certain communicable diseases. In Form 1 certain special regulations were incorporated that had previously been printed as loose leaflets. The changes are not of sufficient moment to justify reproduction.

SPECIAL COMMUNICATIONS.

On the 2nd of April, 1915, a communication was sent to all physicians in the Commonwealth relative to the Department's determination to do Wassermann tests for syphilis, the communication reading as follows:—

"Dear Doctor:—

"The State Department of Health is now prepared to perform complement deviation tests for Syphilis. Shipping containers (Outfit No. 5) and directions for collecting and shipping specimens may be secured by forwarding a request to the Division of Supplies, Department of Health, Harrisburg, Pa.

"Very truly yours,

"SAMUEL G. DIXON,

"Commissioner of Health."

On the 15th day of May a communication was sent to all midwives and nurses in the Commonwealth, calling their attention to the Act of Assembly approved the 5th day of May, 1913, requiring a report

to be made to health authorities and physicians concerning the condition of the eyes of infants that become inflamed, and calling attention to Forms 34-A and 34-B especially prepared for their use. The communication and forms read as follows:—

"Dear Madam:—

"For the convenience of midwives, nurses and other persons who are required under the Act of Assembly approved the fifth day of June, 1913, to make a report to health authorities and physicians concerning the condition of the eyes of infants that become inflamed, swollen or reddened within two weeks after birth, I had printed the enclosed forms 34-A and 34-B. If you have use for any of these forms you may secure them by forwarding a request to the Division of Supplies of the Department of Health, Harrisburg, Pa.

"I am enclosing with these forms a circular quoting the law and giving some suggestions concerning the care of the eyes.

"Very truly yours,

"SAMUEL G. DIXON,

"Commissioner of Health."

"Form 34-A. District No.....

"COMMONWEALTH OF PENNSYLVANIA.

"Department of Health.

"INFLAMED EYES IN INFANTS.

".....191...

"(Report to Health Authorities.)

"In compliance with an Act of Assembly approved the 5th day of June, 1913, I beg to report that....., the infant.....of Mr. and Mrs....., residence..... Borough or City of ....., or Township of ..... County of ....., is now suffering with inflammation of the eyes.

"In addition to forwarding this report to the proper health authorities, I forwarded a similar report to Dr....., residence..... on....., 191...

".....

"P. O.....

"N. B. Midwives, nurses and other persons having the care of infants whose eyes become inflamed or swollen or reddened within two weeks after birth are required by law under penalty to report the same in writing within six hours after the discovery thereof to the proper health authorities and to some regularly qualified practicing physician in the district.

"SAMUEL G. DIXON,

"Commissioner of Health."

"Form 34-B.

"COMMONWEALTH OF PENNSYLVANIA.
"Department of Health.

"INFLAMED EYES IN INFANTS.

".....191...

"(Report to Physicians.)

"Dear Doctor:—

"In compliance with an Act of Assembly, approved the 5th day of June, 1913, I beg to report that....., the infant.....of Mr. and Mrs....., residence....., Borough or City of....., or Township of....., County of ....., is now suffering with inflammation of the eyes.

".....

"P. O.....

"N. B. Midwives, nurses and other persons having the care of infants whose eyes become inflamed or swollen or rendened within two weeks after birth are required by law under penalty to report the same in writing within six hours after the discovery thereof to the proper health authorities and to some regularly qualified practicing physician in the district.

"SAMUEL G. DIXON,
"Commissioner of Health."

On the 3rd of June a communication was sent to all the Department of Health field officers who have anything to do with quarantine and to all boards of health in the Commonwealth, calling their attention to the changes made by the Act of May 28, 1915. The communication was as follows:—

"June 3, 1915.

"Dear Sir:

"'An act to safeguard human life and health throughout the Commonwealth, by providing for the reporting, quarantining and control of certain communicable diseases, and for the prevention of infection therefrom, and prescribing penalties for violations of the act,' has just been approved by the Governor of the Commonwealth. It repeals the act of May 14, 1909, and fixes a new minimum standard for quarantine and school admission for a number of communicable diseases. In most other particulars the act is similar to the law under which we have been working since 1909.

"County medical inspectors and health officers will forthwith take note of the following changes:

"Measles, German measles, mumps and chicken pox quarantine may now be lifted at the end of sixteen (16) days, if the attending physician so requests and certifies to recovery of the person so afflicted.

"Those residing on premises quarantined for scarlet fever, measles, German measles, mumps and chicken pox, who have had the particular disease for which the quarantine has been established, when official records show that they have had it or where the attending physician certifies to personal attendance during such disease, may be permitted to remove to other premises occupied by adults and

children having had the particular affection, and resume school attendance the day after such removal. Children removed from premises quarantined for any of these diseases who have not themselves had the particular affection may only be removed to homes occupied exclusively by adults, and may, fourteen (14) days after such removal, be readmitted to school.

"Pupils residing on premises quarantined for diphtheria, not contracting the disease, if immunized with diphtheria antitoxin, may be removed to other premises occupied only by adults and may re-enter school five (5) days after such removal.

"In all instances, removal from premises takes place as heretofore, with the consent of the health authorities and after taking a disinfecting bath and putting on disinfected clothing.

"Other changes in the law require the reporting of paratyphoid fever and placarding the premises, from which such cases are reported, as TYPHOID FEVER; discontinuance of placarding for erysipelas; and a requirement that every teacher, principal, superintendent or other person in charge of public, private, parochial or other school shall report to the health officer any unusual rash, skin eruption, sore throat or disease of the eye.

"As soon as the printed act is available, a copy will be mailed to you.

"Very truly yours,

"SAMUEL G. DIXON."

This was followed on the 17th day of August by a further letter to the same officials, accompanied by a copy of the act; and on the 21st day of August a letter was sent to the physicians of the Commonwealth, calling specific attention to the changes in the organic law relating to quarantine, accompanied by a copy of the act. These communications read as follows:—

"August 17, 1915.

"To Secretaries of Boards of Health:

"Dear Sir:—

"About the first of June a note was sent you, together with copy of a letter forwarded to the Department's rural health officers, calling attention to the new act making certain changes in the quarantine law. It gives me pleasure to enclose a copy of this act.

"The Department of Health has caused to be sent to every physician practicing in your municipality a copy of the law, together with a letter calling attention to certain changes in quarantine procedure and to the fact that your board may enforce requirement beyond the minimum designated in the act.

"Very truly yours,

"SAMUEL G. DIXON."

"To Health Officers:

"Dear Sir:—

"Under date of June 3rd we called your attention to the new quarantine law and to certain specific changes in periods of quarantine and in methods of returning to school children who happen to have previously suffered from some one of the quarantinable diseases.

"A copy of the act is herewith enclosed. You will please give it careful study and file it in your manual in place of the act of May 14, 1909, and be guided by it in all of your future quarantine work.

"In a short time the Division of Supplies will send you new placards and new circulars for most of the quarantinable diseases, all drafted in harmony with the present act. As soon as these new supplies reach you, you will please destroy

all old placards and all old circulars, except Form 11 and the various circulars printed in foreign languages, and in future keep yourself supplied with the new forms. The form numbers on the circulars and placards will continue the same as heretofore.

"By order of Samuel G. Dixon, Commissioner of Health.

"Very truly yours,

"B. FRANKLIN ROYER,

"Chief Medical Inspector."

"August 21, 1915.

"Dear Doctor:—

"Enclosed please find the new organic law of the Commonwealth governing quarantine and the control of certain communicable diseases.

"You will note that in the second class townships in future the health officers will maintain a minimum period of sixteen days for measles, German measles, mumps and chicken pox; that legal provision is made to allow health authorities when official records give satisfactory information to transfer to other premises and readmit to school those who have had previous attacks of scarlet fever, measles, German measles, mumps and chicken pox. A careful perusal of the act will readily disclose any other important changes in the quarantine laws.

"Municipalities having boards of health, however, may, as in the past, extend their minimum requirements beyond those of the act and as heretofore are not permitted to abridge the minimum requirements of the act.

"Very truly yours,

"SAMUEL G. DIXON."

On the 8th of November a communication was sent to communities entitled to boards of health that were not, so far as official records showed, complying with the law in reporting to the State Department of Health. This communication reads as follows:—

"November 8, 1915.

"Dear Doctor:—

"Enclosed please find list of communities in your county entitled to have boards of health but so far as we are aware not now maintaining such boards, at least, the board of health is not efficient, none of them having made any sort of report concerning communicable diseases in their communities as required by law, within three months, some of them for a very much longer time.

"Please get in touch with the president of councils or commissioners as quickly as possible and find out if a board of health is in existence, and if so, whether the board is equipped to do work and why they have failed to report to this Department at the end of each week and for the fraction of a week at the end of each month as required by the acts of June 12, 1913, and May 28, 1915. We will base our judgment on your investigation and if no board of health is found we will take charge and do the work at the expense of the local treasury.

"By order of Samuel G. Dixon, Commissioner of Health.

"Very truly yours,

"Chief Medical Inspector."

This resulted in the Department taking charge of a number of boards of health. As the year ends the Department is in charge of eighty-two boroughs.

On the 9th of November a communication was addressed to boards of health of the Commonwealth, calling attention to the Acts of Assembly published in Bulletin 70, and to the rules and regulations of the Department relative to the display of foodstuffs in such a way as to protect them from flies and animals.

"November 9, 1915.

"Dear Sir:

"In Pennsylvania Health Bulletin No. 70, which we have recently sent you, you will find the Public Health Legislation for the session of 1915. The quarantine law and the act regulating sanitary conditions in hotels and restaurants have been separately sent to you, together with a letter calling your attention to these acts. In Bulletin 70 we have published, in addition to the laws, rules and regulations adopted by the Advisory Board of the Department of Health on the 14th day of January, 1915.

"These rules and regulations, of course, are binding everywhere in the Commonwealth. Your attention is especially called to these regulations published on page 61 of the Bulletin, and also enclosed herewith, first, to the regulations requiring the display of food stuffs in such a way as to protect them from flies and from the pollution of animals on the streets, and, second, the making reportable a number of diseases not heretofore reportable.

"Of course, we anticipate that your board will be glad to put these rules and regulations into force at once.

"Very truly yours,

"SAMUEL G. DIXON."

In December smallpox of a very mild type developed in certain sections of Lackawanna County, and as exposure was rather widespread, a communication was addressed to all physicians in the county reading as follows:—

"December 4, 1915.

"Dear Doctor:—

"You are aware that at the present time smallpox of a very mild type is prevalent in your vicinity and up to the present moment the original case has not been found and may still be at large disseminating infection. It is evident that smallpox existed for sometime unrecognized and that there are many contacts in the various mid-valley towns.

"In order that no case may go unrecognized, you are urged to watch carefully any of your patients showing moderate fever, headache and general bodily pains which, under ordinary circumstances, would pass as a case of 'la grippe.' Such cases should be kept under observation for at least three days after fever and pain subside and examined for any rash, and where an eruption appears that is not clear to you, an appeal to the county medical inspector will at once bring you expert counsel. By careful observation of cases of slight illness and search for skin eruption, patients suffering from this type of smallpox will be discovered before they become a public health menace.

"All unvaccinated persons in your community should be vaccinated, and it is well to recommend revaccination to all those who have not had a successful vaccination in the last seven years.

"Careful cleansing of the site of the vaccination with soap and water followed by 65% alcohol is generally recognized as a safe method of preparation. Subsequently the vaccination should be treated as a surgical clean wound. It is advisable to

impress upon your patients, especially the parents of children, that neglect of a recently performed vaccination is responsible for the sore arms that sometimes follow it.

"It is only by the cooperation of every physician and by the utmost vigilance on their part that smallpox can be prevented from gaining a foothold.

"Very truly yours,

"SAMUEL G. DIXON."

Forms 9-A and 14 were enclosed with the foregoing letter.

On the 31st of December a communication was addressed to superintendents of hospitals throughout the Commonwealth, calling their attention to failure on the part of some of their officers to report forthwith in writing the various communicable diseases found in the hospitals.

"December 31, 1915.

"To Superintendents of the Hospitals.

"Dear Sir:—

"A good many complaints have come to the Department from time to time that hospitals in various sections of the State, and some of them, I regret to say, receiving State appropriations, are not careful to comply with Section 1 of the Act of May 28, 1915, in reporting forthwith in writing all diseases enumerated in this act. You will note that it is your duty to have such report forwarded forthwith to the local health authorities in the municipality in which your hospital is located and that failure on your part to comply with the law will justify our advising that the penalty of the law be invoked.

"I would also call your attention to the regulations of the Advisory Board requiring the reporting to the health authorities of certain occupational diseases not mentioned in the quarantine law.

"Very truly yours,

"SAMUEL G. DIXON."

A copy of the Act of May 28, 1915, and Form 1-B were enclosed with the foregoing letter.

PREVALENCE OF CERTAIN COMMUNICABLE DISEASES.

QUARANTINE WORK.

In the course of the year 24,285 morbidity reports were received and handled by the Department's health officers in the field, and quarantine, either modified or absolute, was established over 18,543 premises, and in the pursuance of the routine work of this corps of Department officers 39,165 rooms were disinfected. Details concerning the amount of work done in each county, the number of rooms disinfected, houses quarantined, etc., will be found in special tables at the conclusion of the Division's report.

The county medical inspectors made important field investigations for the purpose of establishing diagnoses and enforcing proper quarantine regulations for the various quarantinable diseases as follows:—

Variola,	125	Epidemic meningitis,	4
Typhoid fever,	363	Chicken pox,	842
Diphtheria,	435	Whooping cough,	240
Scarlet fever,	674	Miscellaneous,	1,293

In pursuance of their routine duties in establishing regulations on dairy farms where special restrictions had to be established on account of typhoid fever, smallpox, diphtheria, scarlet fever and epidemic meningitis, special visits were made for each particular disease, and are tabulated as follows:—

Typhoid fever,	315	Scarlet fever,	126
Smallpox,	3	Epidemic meningitis,	7
Diphtheria,	173		

In 284 instances it was not possible to make satisfactory arrangements for the sale of milk to continue by having others not residing on the premises handle the milk, hence, the sale of milk was stopped. In forty instances the milch cows in the herd were transferred to other premises and the sale of milk continued. In 358 instances county inspectors in following up probable sources of infection found that children in the contagious stage of communicable disease had been in school and hence these rooms were ordered closed until disinfected.

The more extended study of the work of the county inspectors arranged by counties follows in the later pages of the report of this Division.

SMALLPOX. One hundred and twenty cases of smallpox were reported during the year. The only place approaching an epidemic in any section of the Commonwealth occurred in Armstrong County, where a great deal of exposure occurred prior to the diagnosis of the first case, and where in June a total of thirty-two cases of smallpox occurred, two cases in the city of Kittanning and thirty in rural Armstrong County. This outbreak was plainly traceable to contact exposure in the city of Cleveland, Ohio, but yielded promptly to Department methods. The disease was introduced in other sections of Pennsylvania from points where the disease was prevalent in sections of Ohio and West Virginia, but was prevented from spreading in other sections.

An outbreak of smallpox occurred in the Bethany Orphanage, Quincy Township, Franklin County. Dr. Kinter, county medical inspector, accompanied the Chief Medical Inspector on a trip to this orphanage, and was immediately placed in charge of the institution during the quarantine, and assisted by Miss Matthews, the Department's visiting nurse for this county, successfully vaccinated all the children who had not previously been vaccinated. Department officers were so successful in this work that no secondary cases occurred.

One case of smallpox developed in Waynesburg, in a barber, two weeks after having received a letter from a man applying for a position in the barber shop, writing from Kittanning. A careful investigation by the Department's county medical inspector of Armstrong

County, both in Armstrong County and in Waynesburg, seems to show pretty conclusively a clear case of transmission of infection through the mails. The barber residing in Kittanning was ill with smallpox at the time he wrote the letter applying for a position in Waynesburg, and two weeks later the recipient of the letter sickened with the disease.

MEASLES. This disease was more prevalent during 1915 than for the preceding year, a total of 41,368 cases being reported from all sections of the Commonwealth, with a total death list of 565.

SCARLET FEVER. This disease has declined very greatly, both in the number of cases and in the number of deaths. A total of 9,860 cases of the disease was reported for the year as contrasted with 17,190 for 1914, the number being very much less than for any year since 1908. The total number of deaths for the year from this disease is 301, this being the lowest total number of scarlet fever deaths in the Commonwealth since the creation of the Department of Health. The best preceding year was 1912, when 552 deaths were reported. In 1908 more than 1,200 deaths were reported. The disease continued unduly prevalent in Greater Pittsburgh and the metropolitan district adjacent thereto, and in Johnstown and its suburban districts during the early half of the year.

The only notable outbreaks of this disease requiring the assistance of Department officers occurred in the outbreaks of Gettysburg College and Washington and Jefferson College, where the Associate Chief Medical Inspector rendered active assistance, and in the town of Lehighton, where the Assistant Chief Medical Inspector rendered assistance.

DIPHTHERIA. The total number of cases of diphtheria was fewer than for any year since 1910, 14,645 cases being reported as against 16,070 for the preceding year. The total number of deaths from this disease is smaller than during any year since 1910, 1,632 deaths being reported as against our previous best year, 1908, when 1,970 deaths were reported, or against 1,925 deaths for the year 1914, and more than 2,000 for each of the five years preceding.

A special investigation was made by the Associate Chief Medical Inspector in the Oak Run school district in Lycoming County, where the disease was unduly prevalent for a considerable length of time; in the city of Sunbury by the same officer, and in DuBois, Clearfield County, by Acting Associate Chief Medical Inspector Strode.

TUBERCULOSIS. It is somewhat gratifying to note a better reporting of tuberculosis than has previously been recorded. This may also mean that physicians are more prompt in making diagnosis of this disease. Fourteen thousand two hundred and sixty-six cases were reported to the Department during 1915 as contrasted with 12,409 for 1914. The increased reporting for this infection is noted both in rural as well as in the urban districts, the increase being rela-

tively greater in the rural than in the urban districts, 373 more cases being reported than for the preceding year, and 469 more being reported from urban, although the proportion in rural districts is slightly below what is reported from urban communities. This may be due in part to a lower incidence in the rural distracts or it may be due to the fact that opportunities for careful examination and exact diagnosis are not as readily available to rural citizens.

TYPHOID FEVER. Cases were reported in slightly greater numbers than for 1914, 8,048 cases being reported as contrasted with 7,653 during the preceding year. In deaths from this disease the State shows a decided saving, a total of 1,034 being reported as contrasted with 1,071 during the preceding year. This total number of deaths may have been influenced largely by the fact that our greatest number of cases occurred during the month of September, the season when the case rate fatality is usually very much lower than in the first five months of the year.

The most interesting outbreaks of typhoid handled by the Department during the year were related more or less closely to a series of outbreaks occuring late in 1914. A very clear-cut milk-borne epidemic of typhoid fever occurred during the autumn of 1914 in the city of Warren. This in turn was followed in December by outbreaks of typhoid fever in the boroughs of Kittanning and Ford City. A series of epidemics gradually developed in other towns down the Allegheny Valley from Kittanning to Pittsburgh at intervals of several weeks, the outbreaks showing very conclusively the influence and dangers of drinking a water highly polluted with sewage. In Kittanning the epidemic was brought about by using unfiltered water during a time when the filters were being repaired, the citizens not being warned to boil their drinking water. The filtration plants in the communities down the river that were ordinarily effiicent in operation proved totally inefficient in the presence of the increased pollution of the river incident to the discharge of large amounts of typhoid sewage, and in each instance where inefficient filtration or faulty operation of plants obtained, typhoid fever occured, and in each instance where the filtration plants were operated to their very highest degree of efficiency and were thoroughly modern in construction, less typhoid fever occurred. The lesson from this descending river infection seems clearly to be that health authorities must insist upon purification of sewage as well as efficient purification of drinking water supplies. Thus only may we secure a reasonable factor of safety.

A notable epidemic of typhoid fever occurred in Newport, Perry County, where it seems very clearly proven that the infection was milk-borne in character, that the milk was infected by an innocent carrier who became a carrier while nursing her husband through a

fatal illness and without herself contracting the disease. A detailed special joint report by the Divisions of Medical Inspection and Engineering is worthy of careful study.

Another notable epidemic occurred in the State Insane Hospital at Danville and was closely associated with a later epidemic occurring in the town of Danville. The source of the epidemic in the insane hospital was not as definitely proven as might have been desired, and yet it looks much as if the assistant chef, who frequently bathed in the river, contracted a mild type of the disease and later suffered from a severe relapse, and that he may have infected the food supplies going to the major portion of the institution and have been directly responsible for the epidemic. Within a few weeks after this outbreak occurred in the Danville Insane Hospital and subsequent to the increased river pollution by the sewage from this institution, cases occurred with undue prevalence in the town of Danville. Danville receives its water supply from the river, less than a mile below the outflow of the treated effluent of the Danville State Hospital. The Danville water filtration plant was working considerably beyond its safe capacity, particularly on certain days of the week and on certain hours of the day. It was not possible on such days to "filter the water" after cleansing filters.

It would seem from a careful study of the special report in the section of this communication devoted to such reports that some of the effluent from the hospital sewage disposal plant, highly polluted with typhoid virus, was not efficiently disinfected and that the virus was attenuated rather than completely killed. The period of contact of hypo-chlorite of lime after introduction at the disposal plant before reaching the river, when great dilution took place, was less than twelve minutes; and in a very short time thereafter this sewage, greatly diluted with water, reached the Danville filtration plant, where after filteration it was again treated during the hours of the day when the filters were overworked with a totally inadequate amount of hypo-chlorite of lime. It would seem as though these two doses of hypo-chlorite of lime did not purify the water, but that in some way they did lessen the virulence of the organisms that passed through the sewage disposal plant and the water filteration plant, because the death rate from the disease in the town of Danville was less than one-half the death rate among the insane patients.

An interesting typical water-borne epidemic of typhoid fever occurred at Shippensburg and vicinity in Cumberland County and the adjacent section of Franklin county. The detailed report of this outbreak contains no new feature other than the use of nurses in visiting suspected cases prior to the diagnosis, and by this careful use of nurses seems to show a lessening of secondary cases by having proper precautions taken during the early stages of the disease.

An interesting outbreak of typhoid fever in Lewistown, Mifflin County, was studied by the Associate Chief Medical Inspector and very conclusively proven to be due to a carrier, the case perhaps having been responsible for an outbreak during an earlier period in the summer, but not definitely proven at that time.

An epidemic of typhoid fever of considerable proportions, the second during the year, in the vicinity of Abington, Cheltenham and Moreland Townships, Montgomery County, and in Jenkintown, Philadelphia County, was studied by the Chief Medical Inspector associated with representatives of the Engineering Division. This outbreak occurred in the summer and early autumn, where it seemed pretty definitely proven that the disease was milk-borne in type, and yet it was not possible to determine with exactness the source of the infection that reached the milk.

POLIOMYELITIS. Poliomyelitis occurred with undue prevalence in the city of Erie and Erie County and the adjacent counties in northwestern Pennsylvania during the month of August. Because of this undue prevalence, Drs. Herbert Fox and Damaso Rivas were detailed to make special epidemiological investigations and research studies. The local health authorities in the city of Erie and those in the boroughs of Erie County cooperated most heartily with the Department's officers, and yet it was not possible to establish, from the researches undertaken, anything new from either a clinical or pathological standpoint.

LEPROSY. An opportunity presenting while in field work to stop in Wilkes-Barre and examine Joe Norman, the leper who had been examined just the year preceding, I took with me photographs made the previous year and carefully compared the patient's present condition with that portrayed in the pictures at the time he was originally examined. There seems to be no doubt at the present time that the man proven to have leprosy is still suffering from that disease. It is interesting to note that the lesions on the face and hands have shown no material change. In a few instances they are actually smaller; in several instances on the eye-brows and on the cheeks, a little larger. The skin over the crest of the shins is a little less life-like, is dark and more scaly. There seems to be some beginning of oedema in the vicinity of the external malleoli. The wife and two children of this man continue living in the same house with him, and although the house is kept thoroughly cleansed and as nearly as possible free from insects, the danger of infection from this man must be constantly present. This is particularly true with relation to his wife who admits having lived with her husband under the same conditions as before he contracted the disease.

SPECIAL REPORTS.

TYPHOID FEVER—BLOOMSBURG.

While investigating typhoid fever in Danville, my attention was called by Dr. J. E. Shuman, secretary of board of health of Bloomsburg, to the appearance of several possible cases of typhoid fever in a small but sharply limited section of the town. I went to Bloomsburg from Danville on several occasions to investigate the situation.

The borough of Bloomsburg lies about ten miles east of Danville on the north bank of the North Branch of the Susquehanna River. The population is about 8,000.

The water supply for Bloomsburg is drawn from Fishing Creek and run into sedimentation basins, treated with coagulate and then passed through a rapid sand filter. Hypo-chloride of lime is added as a disinfectant before the water is pumped into the water mains. In addition to this supply, there are many dug wells in various parts of the town which supply a certain portion of the drinking water. Along East Seventh Street several of these wells are located, two of them being situated along the public highway in front of the residences of J. C. Gilbert and Samuel Pugh, respectively. Neither of these wells is protected from surface contamination, and the Gilbert well in particular receives the surface drainage from all sides. The surrounding community uses these wells quite freely.

It is of importance to bear in mind that in this community the American Car and Foundry Company and the North Branch Transit Company car barns are located.

There occurred in this section of the town twenty-six cases of typhoid fever, all of which may be grouped together as having received their infection from a common source.

The onsets of these twenty-six cases are as follows:

Aug. 31	1	Sept. 28	1	
Sept. 19	1	Sept. 29	1	
Sept. 20	1	Sept. 30	..	Use of well discontinued.
Sept. 21	2	Oct. 1	1	
Sept. 22	1	Oct. 2	1	
Sept. 23	1	Oct. 3	1	
Sept. 24	1	Oct. 5	5	
Sept. 25	1	Oct. 9	1	
Sept. 26	2	Oct. 10	2	
Sept. 27	1	Oct. 14	1	

The first case, G. R., a boy of three years, lived in the Anderson house, which is located but a few feet from the Gilbert well. The boy was accustomed to playing about the yard and well until he was

taken sick on August 31, 1915. During the sickness his stools and urine were disinfected with chloride of lime and buried in a trench dug in the rear of the Anderson house. The wash water from the house was run in an open drain on to the surface of the ground.

Less than three weeks after the onset of G. R.'s sickness other cases began to appear in the neighborhood of East Seventh Street, so that within a period of a little over three weeks twenty-five additional persons sickened with the disease.

A summary of the data concerning this group of cases is as follows:

Age Incidence.

0-4 years,	1	35-39 years,	1
5-9 years,	4	40-44 years,	2
10-14 years,	3	50-54 years,	2
15-19 years,	3	55-59 years,	2
20-29 years,	2	60-64 years,	2
25-29 years,	4		

Occupation.

School,	9	Housewife,	4
Under school age,	1	Laborer,	8
Barber,	1	Gentleman,	1
Mill operator,	1	Foreman,	1

House Incidence.

1 case per house,	14	4 cases per house,	1
3 cases per house,	1	5 cases per house,	1

The milk supply of these various households was derived from six different sources. It was impossible to look upon any of these sources as the infecting medium, as not one of them appeared with a predominating frequency. On the other hand, all the patients had used both borough water and water from the suspected wells on East Seventh Street. It was observed that no one in the town who had used borough water alone developed the disease, so that we must look upon the well water, particularly that obtained from the Gilbert well and perhaps the Pugh well, as the source of the infection.

Four of the individuals infected lived as far as eight miles from the well district, but they all worked in the immediate vicinity of the well; three at the trolley barns and two at the American Car and Foundry Company. In each of these instances the individual had drunk water from the wells on East Seventh Street.

The possibility of other sources of the infection was given careful consideration, but not the slightest suspicion could be aroused by any of the factors discovered.

About the thirtieth of September, 1915, these suspected wells were closed, and just two weeks later cases of typhoid ceased to appear.

The water from several of the wells in the neighborhood was examined bacteriologically at the State Department of Health La-

boratory. Analyses were uniformly good with one exception. The well on the Pugh property showed a total bacterial count per cubic centimeter of one hundred, and as many as 12 B. Coli per cubic centimeter.

The Gilbert well showed in one sample a total bacterial count per cubic centimeter of 24 and no B. Coli. This well it will be remembered drains the surface of the immediate vicinity, and it is reasonable to suppose that further samples would have shown contamination.

The conclusion that the well water was at fault in this outbreak of typhoid fever seems to be entirely justified. The fact that entire families in which the well water was used for drinking purposes sickened with the disease while other families living in adjacent houses who had relied on borough water alone for their supply did not sicken, is a strong confirmation of well infection.

A glance at the accompanying sketch of the infected district shows clearly the grouping of cases about the wells.

The excreta from all patients was uniformly treated with disinfectants and buried in trenches in the ground.

A large number of the cases were removed to the Bloomsburg Hospital as soon as a diagnosis had been established. The routine measures to insure thorough disinfection of all excreta, bath water and clothing, was carefully reviewed with the hospital authorities so that the chances for the infecting organism gaining access to the Susquehanna River should be eliminated.

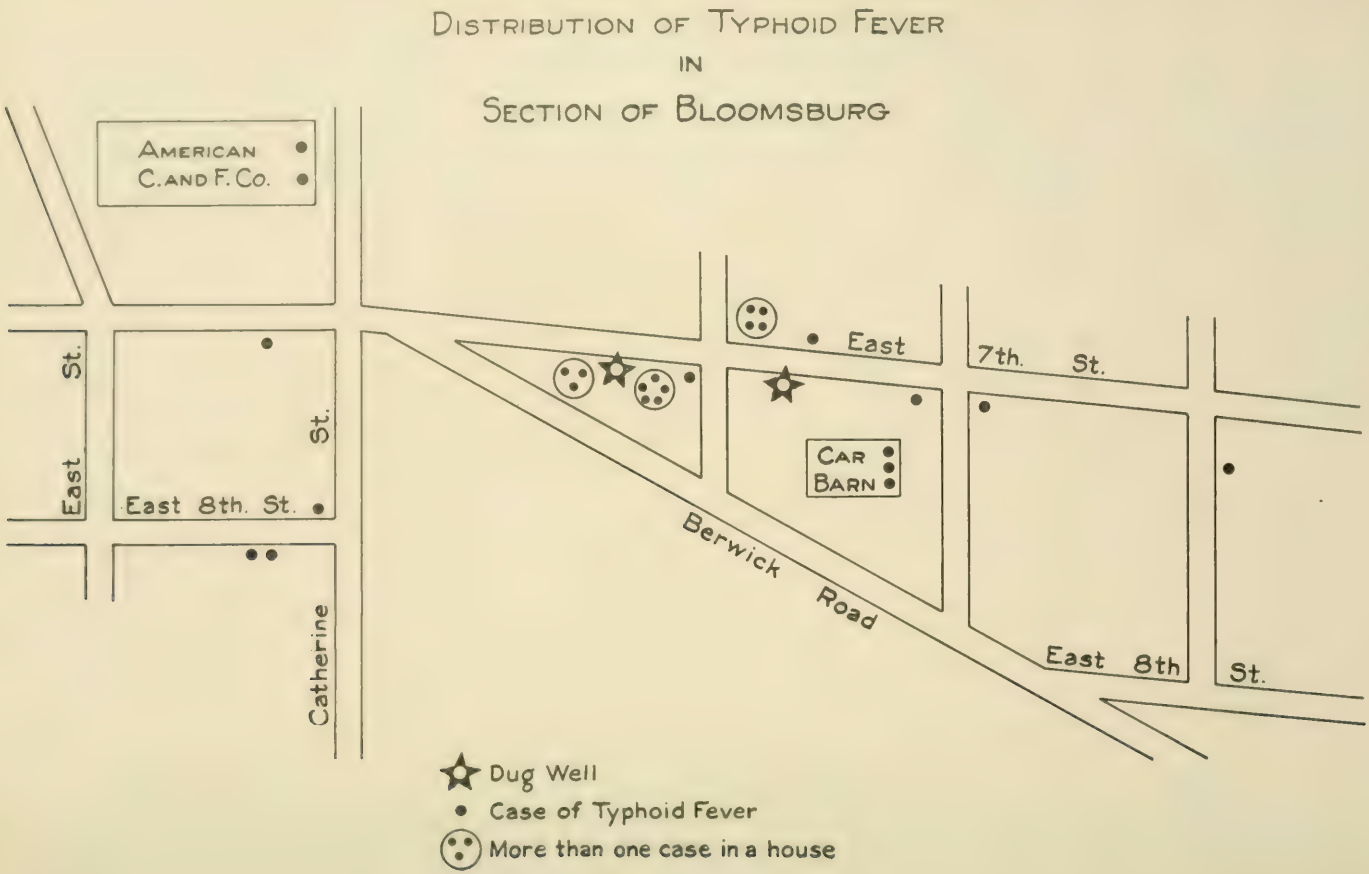
The importance of regulating sewage disposal can best be appreciated by the simple statement that the town has no method of purifying its sewage and that it is emptied raw into the Susquehanna River.

In reviewing this outbreak of typhoid fever one is impressed with the grave dangers that lurk in the use of dug wells in populous communities; also with the ease with which one case of typhoid fever in conjunction with a surface draining well may spread the disease over a wide area.

REPORT OF AN INSPECTION IN BROOKVILLE ON ACCOUNT OF THE PREVALENCE OF TYPHOID FEVER.

In accordance with your instructions issued October 9th, I went to Brookville and investigated an outbreak of typhoid fever which was then running its course.

The borough of Brookville is situated in the west central portion of Jefferson County. Its population at the time of the last census was about three thousand.


DISTRIBUTION OF TYPHOID FEVER
IN
SECTION OF BLOOMSBURG
AMERICAN
C. AND F. CO.
East St.
East 8th. St.
St.
Catherine
East
7th. St.
CAR
BARN
Berwick Road
East 8th
St.
Dug Well
Case of Typhoid Fever
More than one case in a house

The water supply is taken from North Fork Creek half a mile above the town. The water passes through a rapid sand filter and is pumped to a reservoir before it enters the town mains. In addition to the town water, there are numerous dug wells and springs which supply a fair portion of the drinking water. The largest and most extensively used spring is located on a hillside facing East Main Street. The water is piped to a street watering trough immediately below the spring. Many of the families living on East Main Street used this water on their tables, and many travelers passing by stopped to water their horses and quench their thirst. Back on the hill above the spring stood twelve or more dwellings, each of which is provided with a privy of the shallow well type. During the past five years several cases of typhoid fever have occurred in the immediate vicinity of the spring, although at present most of these individuals are not living here. Immediately above the spring is an open field where small boys are accustomed to play. Among these boys, one F. S., had typhoid two years ago. It was suspected that he might have been the infecting agent of the spring, and consequently his blood, feces and urine were sent to the laboratory for examination. The report showed no B. Typhosus in either the feces or the urine and the Widal test of the blood was negative.

About the middle of September cases of typhoid fever began to appear in certain residences along East Main Street. Between September 16th and October 8th there were twenty-one cases reported. The important facts derived from the investigation of these cases may be summaried as follows:

The Onsets by Dates.

Sept. 16,	1	Sept. 28,	1	
Sept. 19,	1	Sept. 29,	2	
Sept. 20,	3	Oct. 1,	1	
Sept. 21,	1	Oct. 2,	..	Spring placarded.
Sept. 23,	2	Oct. 5,	2	
Sept. 25,	3	Oct. 6,	1	
Sept. 26,	1	Oct. 8,	1	
Sept. 27,	1			

Age.

5-9 years,	3	25-29 years,	3
10-14 years,	5	30-34 years,	3
15-19 years,	2	35-39 years,	1
20-24 years,	3	45-49 years,	1

Occupational.

Housewife,	3	Labor,	2
School,	10	Glass works,	1
Farmer,	2	Clerk,	3

With but one exception all the cases had partaken of the spring water on East Main Street. The exception was H. W., who lives in Rose Township, a short distance beyond the borough line and quite remote from the spring in question. He is employed in the local glass factory and while there drinks city water. At his home the supply comes from a dug well, the bacteriological analysis of which shows nine bacteria to the cubic centimeter and no B. Coli. In an adjacent house during April, May and June of this year there were three cases of typhoid fever treated; two of the three persons are still living in this house. The privy used by these two is of the shallow well type and is situated about two hundred feet from the well used by H. W. The surface of the ground slopes gently from the well towards the privy. Whether H. W. received his infection from some source at his home is an open question, but it is certain that he did not receive the infection from the spring on East Main Street since he had at no time taken any of that water. It seems proper, therefore, to exclude H. W. from this particular group of cases studied. Fifteen of the twenty cases having typhoid fever used borough water, but since there were no cases among the mass of the population the borough water may be eliminated as the possible source of infection.

The milk supply of the twenty cases was derived from twelve different sources. Inspection of these dairies showed all of them to be free from gross contaminating influences and that none of the residents of these several places had had typhoid or any diarrhoeal conditions. It seems justifiable to conclude that milk was not the medium of transference.

The water from the spring on East Main Street was subjected to repeated bacteriological examinations, but at no time was the total bacterial count over two hundred and forty to the cubic centimeter and on no occasion were B. Coli found. These examinations were made on October 7th, which was just one day before the last case was taken sick. If an examination could have been made about the first of September other results might have been obtained. Since the typhoid began to appear about the middle of September, we may infer that the spring became contaminated some time during the last of August and the early days of September. A study of the records of the climatological conditions during this period recorded by Mr. A. B. Weed, of Reynoldsville, shows that in the vicinity of Brookville rain fell on the 21st, 22nd, 23rd and 28th of August and on the 5th and 6th of September. It seems probable, therefore, that the infecting agent may have gained access to the spring during these rain periods and that this contamination had been swept away by the time the bacteriological examinations were carried out.

TYPHOID FEVER IN FROGTOWN NEAR SUMMERVILLE, JEFFERSON COUNTY.

While investigating an outbreak of typhoid fever in Brookville, my attention was called to the prevalence of the disease in Summerville, Jefferson County. In company with Dr. J. H. Haven, president of the board of health of Brookville, and Dr. Carrier, of Summerville, I went over the field involved and can submit the following report:

About one-half mile southwest of Summerville there is a small group of miners' houses, collectively known as Frogtown. Seven of these houses are built in a single row extending along the middle of a hillside, while another smaller group is located at the base of the hill somewhat nearer to Summerville. The privies for these homes are located further up the hill on a line with and about 100 feet from the houses. Still further up the hill there bubbles forth a spring which feeds a little stream running directly between two of the privies and not more than five feet away from either of them. These privies are only about five feet deep but apparently have been dug to water. The stream bed is about on the level with the bottom of the privies. The stream then runs down hill, crosses a path in front of the houses where a tub had been placed to catch the water and facilitate dipping it into buckets. The children in this community drank freely from the tub, while adults as a rule drank water obtained above the privy line.

Twelve cases of typhoid fever developed in this row of houses within a short period. All the affected ones gave clear histories of drinking water at the tub. In a house at the base of the hill two children sickened with typhoid who had constantly played about the water tub and drank therefrom. Another case developed in Summerville; this patient was a daughter of J. S., a householder in the row of houses mentioned above, and had two cases develop in his own family. She had frequently visited J. S. prior to the outbreak of typhoid and drank water from the tub many times.

There developed in all fifteen cases with their onsets on the following dates:

Sept. 13,	4	Sept. 20,	2
Sept. 14,	2	Sept. 23,	1
Sept. 16,	1	Sept. 25,	2
Sept. 17,	1	Oct. 1,	2

Thirteen of the fifteen cases had their onsets within twelve days of one another. One of the two cases developing on October 1st was surely a secondary case; A. O., age 4 years, the son of Mrs. M. S., developed the disease just eighteen days after his mother. The second

case, occurring on October 1st, developed in Summerville and as mentioned above was a frequent visitor to an infected household. She may or may not have been a secondary case.

The age incidence was as follows:

1-4 years,	2	15-19 years,	2
5-9 years,	5	20-24 years,	1
10-14 years,	4	35-39 years,	1

The house incidence was:

1 case per house,	1
2 cases per house,	4
6 cases per house,	1

Fourteen of the fifteen cases used only condensed milk, and in no instance could food infection be suspicioned.

The entire fifteen cases have this in common, that they all drank from the water tub. The stream as it passed between two of the privies must have been constantly polluted thereby and all those who partook of water at the tub would necessarily be drinking diluted sewage.

As soon as the source of the trouble had been located, Dr. Carrier had the spring filled in and the water tub removed, and compelled the householders to use the water piped to their doors by the Pennsylvania Coal Company.

INVESTIGATION OF SMALL OUTBREAK OF TYPHOID FEVER IN COLLEGEVILLE.

In accordance with your instructions, on November 23, 1915, I proceeded to Collegeville. Since September 1st five cases of typhoid fever had been reported, the dates of onset being September 1st, October 14th, 22nd, 27th and November 14th, respectively. One patient who sickened on September 1st had attended a picnic at Schwenkville July 30th, and had drunk water from a well condemned presumably by the Health Department. Some other cases in neighboring towns had been traced to that source and it is assumed that it is also responsible in this case. The other cases all took milk from the F. dairy, and one patient was known to have eaten ice cream at the K. bakery on several occasions. I inspected the F. dairy. Mr. F. told me that his milk is sold in the neighborhood, the people coming for it with their own vessels night and morning. None of it is bottled. Nobody has been sick on his place for the past six months or more. No one has ever had typhoid except himself and that was about sixty years ago. I saw his hired man who has helped to do the milking

since November 1st, and found out that he had never had typhoid. Mr. F. and the hired man do the milking. They wash their hands each time with water from a well in the barn yard. The stables are kept fairly clean.

About 25 feet from the well in the barn yard is a privy on a slightly higher level. It would seem quite possible that the privy may contaminate the well. There is another well near the house which is about 150 feet from the privy and contamination there is not so likely. The milk buckets are washed in water from the well near the house.

The cows pasture in a meadow through which flows a small stream. The stream rises from a spring about two miles above. Along the course of the stream are a number of houses, the drainage from which may be carried into the stream, and it is reported that a family in Trappe (which is a short distance above) had a case of typhoid whose drainage might have reached this stream. Mr. F. had a man who worked for him only the first week in October. I was able to see this man, and to the best of his knowledge he has never had typhoid and has not been sick for a long time.

I visited the K. bakery and interviewed the proprietor. He sells ice cream shipped from Pottstown. He has been accustomed to wash the dishes in raw water from the Perkiomen Creek. I advised him to boil all water twenty minutes before using it either for drinking or washing purposes. There has been no typhoid on his premises and none in his family have had the disease.

The last reported case whose onset was November 14th is very likely a "house infection" from another patient in the house. The patient who took sick on October 27th is the daughter of a physician who was attending the other typhoid cases, and he might have carried the infection to her.

The patient who fell sick on October 14th used water from an artesian well on his own property. Examination of this water showed sewage contamination, so that the inference is that the well was the source of the infection.

Examination reports of the water from both wells on the F. property and at the K. bakery are negative for colon bacilli, but the water used at the K. bakery is so obviously polluted that the one negative examination would probably not rule out pollution.

The outbreak in Collegeville would not appear to be due to one common source. One case is apparently due to an infected artesian well, one due to polluted water at the Schwenkville picnic; one or two may be due to ice cream eaten from plates washed in polluted water, and one case appears to be clearly a house infection.

REPORT OF INVESTIGATION OF TYPHOID FEVER AT RIDGWAY, ELK COUNTY.

Owing to the appearance of six cases of typhoid fever in Ridgway and five cases in St. Marys during the latter part of November and the early part of December, the Chief Medical Inspector directed me to proceed to the towns in question and make an inspection. On arrival in Ridgway on December 11th, I consulted with Dr. James G. Flynn, County Medical Inspector, and also with the president and secretary of the local board of health. I visited and took the census of each case.

R. family, 3 cases: Mother, daughter and son, dates of onset being respectively November 27th, 28th and December 9th. They had visited St. Marys about November 10th, living for about four days on the farm of Vincent Nachtwey, who died of pneumonia on November 13, 1915. The Nachtwey farm was inspected by Mr. M. E. Shaughnessy, of the Engineering Division, who reported a shallow well on the premises which receives surface drainage, and also that milk is sold from the farm to the Elk Dairy Products Company of St. Marys. While on the farm the R. family drank water from the well; when they returned to Ridgway they used borough water and condensed milk, occasionally taking milk from the L. dairy. The mother only had eaten ice cream and the son only had eaten raw oysters on one occasion, so that neither ice cream nor shell-fish appear to be the causative factors. The probabilities are that the mother and daughter were infected on the Nachtwey farm and that the son was a contact case.

C. S. P., aged 24, a lineman of the Ridgway Electric Light Company, was taken ill November 25th. He drank water from many sources while at work as a lineman and also ate raw oysters at a number of places, so that either water or oysters may be the source of his infection, while it is impossible to find the exact origin. His infection was very mild and the diagnosis was not definitely made until December 5th, confirmed by Widal on December 13th.

A. S. and B. H. sickened on November 25th and 30th, respectively. Both used borough water but obtained milk from different sources. Both had eaten raw oysters purchased at different places, and B. H. had eaten ice cream within thirty days made at the local ice cream factory. It is difficult to establish the source of infection in these two cases, unless shell-fish can be proved the cause.

Mr. C. L. Siebert, of the Engineering Division, investigated the watershed and filtration plant of Ridgway and found that filtration had been suspended for some time awaiting the arrival of new sand. As the present cases antedated the use of the raw water, this circumstance cannot be considered as a causative factor.


BRATTON AVE.
RIDGE ROAD
FIFTH ST.
FOURTH ST.
THIRD ST.
JUNIATA AVE.
GRAND ST.
WAYNE ST.
MARKET ST.
BROWN ST.
DORCAS ST.
WATER ST.
ELIZABETH ST.
HALE ST.
CHARLES ST.
WAYNE ST.
MAIN ST.
START
JUNIATA RIVER
TUSCARORA CREEK
GREEN ST.
CHESTNUT ST.
MARBLE ST.
VALLEY ST.
LOGAN ST.
FORSYTHE ST.
DEPOT ST.
MONTGOMERY AVE.
E. CHESTNUT ST.
SHAW AVE.
FEDER AVE.
PANNEBAKER AVE.
SPRUCE ST.
PINE ST.
STOP
WALNUT ST.
CATHERINE ST.
CENTRAL AVE.
LEWISTOWN BOROUGH
Milk Route of H.W. Ellinger
Typhoid Fever Cases of May 1915 (17 Cases)
Cases occurring in same house
Scale-
0
1500ft
3000ft
4500ft
6000ft

REPORT OF INVESTIGATION OF TYPHOID FEVER IN LEWISTOWN, YEAGERTOWN AND REEDSVILLE, MIFFLIN COUNTY.

The occurrence of a number of cases of typhoid fever in Lewistown and vicinity was brought to the attention of the Department during the first week of November, 1915. I was detailed by the Chief Medical Inspector to conduct an investigation, and accordingly proceeded to Lewistown on November 9th. I was assisted in this work by Dr. C. H. Brisbin, county medical inspector.

There had been isolated cases of typhoid in Lewistown during May, June and July, but a relatively large number of cases began to appear in the latter part of August and during September, October and the early part of November, most cases being reported the last week of October and the first week of November.

A complete analytical study was made of each case which had appeared since June, 1915. There were twenty-one cases in Lewistown, three cases in Yeagertown and five cases in Reedsville.

LEWISTOWN CASES.

Onsets.

June	20,	1	Oct.	21,	1
Aug.	1,	1	Oct.	22,	1
Sept.	4,	1	Oct.	24,	1
Sept.	5,	2	Oct.	26,	1
Sept.	21,	1	Nov.	1,	2
Sept.	30,	1	Nov.	2,	1
Oct.	2,	1	Nov.	3,	1
Oct.	3,	1	Nov.	9,	1
Oct.	4,	1			
Oct.	10,	1			21
Oct.	17,	1			

AGE AND SEX.

Age.	Male.	Female.	Total.
0— 4,	3		3
5— 9,	2	2	4
10—14,		1	1
15—19,	1		1
20—24,	1	2	3
25—29,		1	1
30—34,	2	1	3
35—39,			0
40—44,	1		1
45—49,		2	2
50—54,		1	1
55—59,		1	1
	10	11	21

The dates of onset show no tendency to an "explosive" character of the outbreak.

WATER. The water used regularly by the patients was the borough supply, which is piped from Minehart's Gap and Cooper's Gap. Three of the patients had been out of town on occasional short trips and on such occasions had drunk water from springs.

A careful consideration of various foodstuffs as media of infection eliminated each one with the exception of milk.

MILK SUPPLY. One fact become very evident from the first, and that was that eighteen of the twenty-one cases took milk from dairy E. Four out of the eighteen took milk from E. occasionally, and two of these (father and daughter) remembered distinctly the date on which they took the milk from E. as the only occasion when they had used his milk, and stated that they were taken ill three weeks later. In the three cases who did not use E.'s milk one worked at Burnham and drank water from a dam there; one drove a delivery wagon and drank water from different sources along his route; and in the third source of the infection is not clear. In none of these three cases was the medium of infection definitely established.

An inspection of dairy E. was made. The farm is about five miles from Lewistown. The water is obtained from a dug well near the house. A privy is about 100 feet from the well, but apparently does not drain toward the well. The well water has been used altogether for household purposes and for washing the milk bottles. The privy is badly protected and admirably adapted as a "fly breeder." The stable was not well kept and apparently not cleaned out often enough. Mr. E. and his wife were the only ones who did milking; no one else worked on his farm, and there were none in his house other than members of his own family. He had typhoid ten years ago, but none of the others of his household ever had the disease. Two months ago when this dairy was first under suspicion of being the source of some sporadic typhoid cases, the county medical inspector took specimens of Mr. E.'s urine and feces. These were reported negative for typhoid bacilli by the Department Laboratory. Mr. E. says that he and his wife always washed their hands before milking. The milk bottles were washed in soapy water and rinsed; twice a week they were scalded, but they were never boiled. There had been no visitors to E.'s farm in the last sixty days and no transient employes.

On the next farm about 300 yards from E.'s place there was recently a case of typhoid. We were informed that there had been no communications at all between the two farms as the families were said not to be even "on speaking terms" with each other. There is no evident drainage from this neighboring farm to E.'s farm.

With the exception of the aforementioned three cases in which infected water might possibly be the cause, all of the Lewistown cases

appeared to be due to infected milk from the E. dairy. There was a possibility that some typhoid carrier or some unrecognized case of typhoid along E.'s route returned to him infected bottles, which, not being sterilized by E., in turn infected the fresh milk. This might have accounted for some of the cases, but in spite of having had typhoid ten years ago and in spite of the negative examination two months ago above mentioned, it was thought that Mr. E. or some one of his family might be the carrier. Accordingly stools and urine of Mr. E. and his wife were again examined in our laboratory for typhoid bacilli and the specimens from Mr. E. reported as "positive for B. Typhosus." Recent experimental work abroad having shown that mere mechanical cleansing of the hands—perfunctory as it often is—is totally insufficient in removing or destroying typhoid bacilli, it thus becomes evident that this carrier of long standing infected the milk.

In each case investigated the premises were inspected, and with the exception of three cases there was an open privy on the premises of each case which was a breeding place for great numbers of flies. In many instances the disposal of the urine and stools from the cases was improperly done and the disinfection was insufficiently carried out. The excreta in some instances were deposited in shallow privy vaults where they were exposed to flies. That there were not more cases is probably due to the fact that the fly season was waning.

Yeagertown Cases.

Three cases were investigated.

Onsets, ...May 30—2 cases.
July 1—1 case.
Ages, ...28, 27 and 24.

The source of their infection is uncertain.

Reedsville Cases.

Five cases were investigated.

Onsets, ...Aug. 7, 26, Oct. 10, 25, 26.
Ages, ...60, 61, 11, 32 and 49.
Sex, ...3 males; 2 females.

Two used well water and one used water from a spring. From physical conditions surrounding the wells and the springs in question, they were very likely polluted even though specimens therefrom were taken for examination and reported by the laboratory negative for B. Coli. One patient very likely acquired his infection by swimming in Honey Creek, which is a sewage polluted stream. The last patient used the municipal water supply. The source of his infection was undetermined.

The Yeagertown and Reedsville cases bear no relation to the Lewistown outbreak, but were investigated in order to take that possibility into consideration.

The outbreak of typhoid fever in Lewistown seems definitely chargeable to milk infected by a typhoid carrier who had the disease ten years previously.

SPECIAL DETAILED REPORT ON TYPHOID FEVER IN YORK COUNTY DURING 1915.

During January five cases of typhoid fever were reported in four townships; one each in Jackson, Manchester and West Manchester Townships, and two in York Township.

During February five cases were reported in two townships; two in Dover and three in Peachbottom Townships.

During March two cases were reported; one each in Lower Chanceford and Peachbottom Townships.

During April and May no cases were reported.

During June two cases were reported; one each in Chanceford and Penn Townships.

During July two cases were reported; one each in Lower Chanceford and Washington Townships.

During August eight cases were reported in six townships; one each in Hopewell, Jackson, Shrewsbury and Washington Townships; two each in Hellam and Newberry Townships.

During September twenty-nine cases were reported in sixteen townships; one each in Codorus, Lower Windsor, Manchester, Manheim, Peachbottom, Springgarden, Warrington, West Manchester and York Townships; two each in Newberry, Penn and Springetsbury Townships; three each in Dover, Jackson, Paradise and Washington Townships.

During October ninety-two cases were reported in twenty-four townships; one each in Chanceford, Conewago, Hellam, Manchester and Springfield Townships; two each in Fairview, North Hopewell, Washington, West Manchester Townships, and Yorkanna Borough; three each in Codorus, East Manchester, Fawn, Lower Windsor, Springgarden and York Townships; four in Peachbottom Township; five in Jackson Township; six in Springetsbury Township; seven in Paradise Township; eight in Dover Township; nine in Windsor Township; ten in Warrington Township; and eleven in Newberry Township.

During November twenty-seven cases were reported in thirteen townships; one each in Fawn, Hellam, Hopewell, Jackson, Lower Chanceford, Manchester, Manheim, North Codorus, North Hopewell,

Springgarden, Washington, West Manchester and Windsor Townships, and Fawn Grove Borough; two each in Lower Windsor and Warrington Townships; three in Chanceford Township, and four in Springetsbury Township.

During December thirteen cases were reported in nine townships; one each in Dover, Jackson, Shrewsbury, Springgarden and York Townships, and Railroad Borough; two each in North Codorus and West Manchester Townships, and three in Paradise Township.

During the year there was an occasional case reported in various parts of the county. There were no cases reported in April or May. There was nothing to create any anxiety in June or July, or even August with eight cases reported was not considered at any time unusual, but September far exceeded August. The great number of cases reported in this month created a good deal of anxiety and was the cause for an investigation relative to the source of the increased number of cases. We continued investigating case after case in order that we might obtain some satisfactory clue relative to the cause.

I found it necessary to take each community where there was an unusual number of cases and examine local conditions as well as tracing the persons afflicted to other persons or community infected. We first investigated an outbreak in Washington Township where the first case was reported, giving date of onset as July 10th. In this household there were five cases, date of onset of second patient, August 3rd; of third patient, September 2nd; of fourth patient, September 15th; and of fifth patient, September 26th.

This family received their water supply from a dug and walled well on the premises. A biological examination of this water disclosed sewage contamination. Notwithstanding the number of cases in this household, I have been unable to trace any spread of typhoid fever from this specific source. There were seven cases reported in Washington Township during the year and five, as before stated, occurred in one household. The sixth case was infected in Paradise Township from polluted water. The date of onset of the seventh case was October 22nd. This case was not separately investigated, but the presumption is that this was a secondary case.

Ten cases were reported in Paradise Township, and on investigating the source of these cases it was found that Mrs. H. S. and her son, W. F. S., were taken ill August 15th and 20th, respectively. G. F. S., husband of H. S., is toll-gate keeper on the York and Gettysburg Turnpike and resides one-sixth of a mile from Abbottstown. He is a paperhanger and was employed a great deal in and about Abbottstown, thus leaving Mrs. S. in charge of the toll-gate most of the time, her son assisting her at intervals. This son spent a great deal of time in the surrounding neighborhood, but the mother was closely confined to her duties, rarely leaving her home.

Third and fourth cases. Mrs. G. S., date of onset September 12th; C. A. S., aged ten years, her son, date of onset, September 25th. They reside about one hundred fifty feet west of the residence of the first and second cases, Mrs. H. S. and her son.

Fifth, sixth and seventh cases. Mrs. E. M., date of onset September 24th; Blanche M., date of onset September 24th; and J. M. M., date of onset September 26th. These cases reside about two hundred yards east of the first and second cases.

Eighth case. Sarah L., date of onset October 10th. This patient resides about fifty yards east of the M. residence.

Ninth case. Estella S., date of onset September 18th; resides about four miles from the residence of the first and second cases, this being the only case in this particular locality. I was unable to trace her to any point where typhoid fever existed, but I believe that she had been on the above mentioned premises or on the premises of their neighbors, where typhoid fever existed.

Tenth case. A. S., date of onset about September 25th. This man worked at the same brick yard and was associated, in going to and from work, with J. M. M., frequently stopping at the M. home, and no doubt was subject to the same influence as the M. family.

The ten cases occurring in Paradise Township with one exception were very closely associated with each other, living in close proximity to each other.

The biological examination of water from various premises whereon typhoid fever was found demonstrated sewage contamination in two wells, the other being negative; but all these families were so closely associated with each other that there is every reason to believe they all drank water that contained B. Coli.

While this local epidemic occurred only one-sixth of a mile from the village of Abbottstown wherein there are at least four hundred residents, yet there was but one case in Abbottstown, and this individual was traced to the two premises of the first and third cases where she no doubt contracted the disease. The sanitary conditions on the premises of the first case were very bad and nursing during the early part of the sickness was carelessly and indifferently done.

A careful examination of causation here led me to conclude that the first cause was in and about the premises of the first case. For this reason Mrs. S., who was of necessity kept on her premises during the entire day and part of the night, was the first one to be taken ill. She was the first one to go down with typhoid fever in this vicinity. Another important item in connection with the causation being on or about this home is that Miss E. H. began working on said premises as a domestic September 12th. She remained about twelve days,

when she returned to her home in Washington Township. On September 28th she began complaining with headache and October 7th took to her bed, going through a very sever attack of typhoid fever. Each patient who suffered from typhoid fever in this vicinity (eleven in all) was traced to the premises of the first and third cases, which are one hundred fifty feet apart, and no doubt their wells have been contaminated and probably from the same source.

This is a region of limestone rock. The well on the premises of the first case has been pumped dry. Before being emptied the well contained about fifteen feet of water. Since pumping the well dry and allowing it to refill, only one foot of water has been found. The water in this well accumulated this summer on account of heavy rains, and no doubt much of this was surface water which found its way through crevices of limestone rock and was retained in the well.

Wellsville Borough and Warrington Township were the next districts that called for investigation on account of an unusual number of cases of typhoid fever. I visited Wellsboro Borough, going over the history of persons ill in the borough; found ten persons ill with typhoid fever, the date of onset in most of the cases being from September 15th to the 25th. The public school in the borough was opened September 6th. The water supply here from history given was in a bad condition, but report of biological examination of this water did not disclose B. Coli.

I further noted that of the ten cases existing, four of them were adults who had not drunk water at the public school building. During the month of October ten cases were reported in Warrington Township, all of them within two miles of Wellsville Borough. Water from a number of wells was examined with negative results.

On August 26th the Rossville Lutheran Sunday school held their annual picnic, at which time the inhabitants of Rossville, Wellsville and immediate neighborhood were present. A biological examination was made of the water supply used at the picnic with negative results. Seventy-five gallons of ice cream had been sold at this picnic. The same make of ice cream had been sold during the entire summer in Wellsville, Rossville and the surrounding country; it had also been sold at several picnics previous to the Rossville picnic.

In carefully considering all probable causes there was but one conclusion, and that was that nearly every case occurred about the same time, some of them being mild cases at first. The correct date of onset was not given and for this reason some difficulty was experienced at first in tracing the sickness to a common cause, and had it not been that the same manufacturer of ice cream had furnished ice cream to three picnics one week later, September 4th—two of which were in adjacent townships, the third in a remote district from Warrington Township—and that a number of cases of typhoid fever were

reported from each one of these particular localities, I might not have suspected ice cream as being the cause of the spread of typhoid fever.

We will next consider the seventeen cases reported in Newberry Township. Two of these cases were reported in August; two in September; eleven in October, and two in November. The first case reported in this township was August 11th. This was an ambulatory case and resided near Goldsboro, where there were a number of cases, some in the borough and some in Newberry Township, that were unreported during the latter part of September and October. Some of these cases were very mild and were treated as cases of bilious fever, malaria fever, etc.

The second case resided in a small settlement called Bald Hill and was reported August 25th, date of onset August 5th. The doctor's first visit was on August 18th. This patient was a laborer and worked during July and August on the State road leading from York Haven to Lewisberry, and in all probability contracted typhoid fever by drinking water while at work along this road. He was nursed by his agen father, and discharges were carelessly deposited on the ground without disinfecting them.

On September 4th a Sunday school picnic was held in a nearby woods and the stand from which refreshments were sold was located about two hundred yards from the home of this patient, who was the only one sick with typhoid fever in this locality, no other known case being within a distance of from four to six miles.

The settlement of Bald Hill numbered about fifty people, the adult male population being laborers, carpenters, masons, etc., and were employed in the surrounding country, but on this Saturday, September 4th, set aside their daily work and with their families and friends spent the day and evening at the picnic.

The same manufacturer furnished ice cream for this picnic as that at Rossville on August 26th. Bald Hill is located about four miles northeast of Rossville.

On the evening of September 4th a young man ate dinner next door to the patient ill with typhoid fever, and on September 20th he developed the same disease. He also spent the afternoon and evening at the picnic. Typhoid fever was reported in six other houses in this settlement, which consists of twelve dwellings, the date of onset of the first case being September 12th and of the last case October 10th.

In seeking a cause for this outbreak, I had before me ice cream that had been suspected of being the cause of typhoid fever in a number of persons who had been present at a picnic August 26th, also a case in the settlement of Bald Hill which had been nursed by a man seventy-five years of age, who had observed no precautions in handling the dejecta, and carelessly threw it on the surface

of the ground about the house. At this season of the year it was very warm and flies were present in great numbers and the houses were not properly protected by screens. I also had to consider the number of cases and close proximity of these houses to each other.

In carefully considering all facts ascertained, it is possible that flies were in part to blame for the spread of the disease; but knowing that the same make of ice cream sold in another locality on the same date was responsible for a number of cases, I am inclined to attach but little blame to flies as carriers in this locality, but am rather of the opinion that ice cream was the chief cause for the spread of the disease.

Dover Township. During 1914 about twelve or fifteen cases of typhoid fever were reported in Dover Township and the borough of Dover. These cases occurred in a part of the township that was remote from the part of the township wherein typhoid fever was found in September, October and November, 1915, and the causes which were present in 1914 were in no way responsible for the last outbreak in 1915, in another part of the township. On September 4th a Sunday school picnic was held at Mt. Royal, and soon after this picnic typhoid fever began in the northwestern part of the township. Three cases were reported in September, eight in October, and one in December. Here, again, there seemed but one conclusion, and that was that there must have suddenly been some causative agent at work in this part of the township. The same make of ice cream was sold here as at Rossville, August 26th, and Bald Hill, September 4th. Again, as on previous occasions, a new center of typhoid fever had been created.

Dover Borough, which is located three miles south of Mt. Royal, was well represented at the picnic, and as a result there were thirteen cases reported in the borough. Some cases in both township and borough were so mild as to pass through the hands of the physicians as minor ailments and hence were not reported.

Windsor Township. Windsor Township is located southeast of York and about fifteen miles from Dover Township and about ten miles from York. During 1915 there was not one case of typhoid fever reported until suddenly in October nine cases were found and reported. This seemed strange at first, but on going into detail it was soon discovered that the persons who were ill had been to a picnic at Freysville, September 11th, and that the same manufacturer of ice cream had supplied this picnic with ice cream as at Rossville, Bald Hill and Mt. Royal. The dates of onsets were the latter part of September and the early part of October. As on previous occasions, a number of the cases were not reported as typhoid fever.

While these different centers were being investigated, typhoid fever was being reported in increasing numbers in York City and suburbs.

North York, a suburb of York, was free from typhoid fever, when during September five cases were reported, during October, seven cases, and a number of mild cases, as in all districts, passed through physicians' care as bilious, gastric fever, etc.

Dr. H. David Smyser, the physician to the board of health of North York Borough, conducted a very careful investigation as to the causation in the borough, and concluded, without being in possession of facts ascertained in other parts of the county, that this same make of ice cream was repsonsible for most of the cases existing in the borough.

Previous to August 26th no history could be obtained pointing to this cream as being the possible source of typhoid fever, but from August 26th to and including September 11th, too many cases of typhoid fever were reported from places where this cream had been sold to longer believe that it was wholesome.

During the latter part of August and early part of September the demand for this cream exceeded anything during the year, and consequently the manufacturer of this product was compelled to procure milk and cream from sources other than the dairies from which he had received his supply during the summer. He bought milk and cream from a number of sources of which he kept no record, and consequently we were unable to trace the exact source of the infection. This particular ice cream which was responsible for a number of cases of typhoid fever in York and York County during September and October, 1915, was sold during the year in scores of places in York and York County. In fact it was the only ice cream sold in many places during the entire summer and was pure and wholesome until about August 26th to September 11th, inclusive, when some portions of it must have been infected. Typhoid fever seemed to be closely associated with the sale and consumption of this ice cream during the period of August 26th to and including September 11th, after which it again seemed to be free from infection.

What happened to this cream during this period has not been ascertained. We know during August and September hundreds of gallons were made and sold, and we believe that the manufacturer accidentally procured milk from some one during this period that was not wholesome, being compelled to buy large quantities of milk during said period from other than their regular dairies. We further believe that only certain portions of this cream was infected. If all the cream made during this interval had been infected, the number of cases would far exceed the number reported.

While we have not been able to trace the cause to its exact location, we certainly have sufficient evidence to definitely fasten the cause in this ice cream, and this cause was overcome after a period of about two weeks. Very strict sanitary precautions were enforced after the latter part of September.

Many very interesting and instructive facts were brought out of this investigation. The manufacturer of this ice cream first assembles a quantity of milk in a vat, after which it goes through a process to secure its standardization. After that the whole is heated to 155 degrees Fahrenheit and held at that temperature for one-half hour.

It is perfectly reasonable to suspect the manufacturer of omitting some of these very important precautions, especially during the hurry-up period, and we know that during this entire period they had an unusual demand for ice cream, it being the time of the greatest heat of the summer.

DIPHTHERIA.

OAK RUN SCHOOL DISTRICT.

In accordance with your instructions, I proceeded to Muncy Township, Lycoming County, on April 27th, in order to investigate the reasons for the continuance of diphtheria in the Oak Run school district. This latter is located in the northern portion of the township and is included entirely in a narrow valley about two miles in length, which, at its southeastern entrance, becomes continuous with Muncy Valley. It is traversed throughout its length by a small stream (Oak Run), on either side of which are located all of the homes of the patrons of the Oak Run school.

Each of the thirteen homes was visited, the census being as follows:

House No.	Name of Householder.	Total Census.	Cases of Diphtheria.
1	Sam Gottschall,	3	2
2	J. H. Worthington,	7	0
3	Montague family,	2	6
4	J. H. Hessler,	8	5
5	Martin Cahn,	8	4
6	Alex Elliott,	3	1
7	Star family,	2	0
8	Sam Temple,	5	1
9	Ed. Worthington,	2	0
10	H. A. Worthington,	3	0
11	Chester Clayton,	6	4
12	Ed. Wheeland,	4	1
13	Walter Grey,	5	0
		58	18

Of the fifty-eight residents, 18 or 32.2% had had diphtheria since the onset of the first case on December 18, 1914. There has been one death, a mortality of 5.5%. Six of the thirteen families shared

in the morbidity. The only factor in transmission was, of course, direct contact. That this was promiscuous is shown by the family and marital relation in those families in which the cases occurred, by the probable school transmission in a few cases, and by the restriction of social intercourse incidental to the isolation of the community and of patients in the community.

The patients in the order of the dates of onsets were as follows:

Case No.	Name.	Age.	Date of Onset.	Occupation.
1	Chrissie Cahn,	14	12/18/14	School.
2	Hazel Cahn,	16	12/25/14	School.
*3	Arthur Cahn,	17	12/25/14	Laborer.
*4	Mrs. A. Cahn,	36	12/29/14	Housewife.
*5	Martin Cahn,	37	12/29/14	Quarryman.
6	Sam Gottschall,	31	1/1/15	
*7	Arthur Gottschall,	4	1/9/15	None.
*8	Walter Wheeland,	7	2/22/15	School.
9	Martha Hessler,	6	3/6/15	School.
*10	Viola Hessler,	15	3/6/15	School.
11	Helen Hessler,	12	3/6/15	School.
12	Pauline Hessler,	8	3/8/15	School.
13	Jimmie Hessler,	4	3/8/15	None.
*14	Hazel Clayton,	11	4/4/15	School.
15	Maud Clayton,	8	4/6/15	School.
16	May Clayton,	6	4/6/15	School.
17	Chester Clayton,	38	4/11/15	Farmer.
*18	Briton Temple,	6	4/28/15	School.

*Reported to the health officer.

The age and sex of all patients were as follows:

	Male.	Female.	Total.
0— 4,	2	0	2
5— 7,	2	4	6
10—14,	0	3	3
15—19,	0	2	2
20—24,	1	0	1
25—29,	0	0	0
30—34,	0	1	1
35—39,	2	1	3
	7	11	18

Twenty-two per cent. were over 30 years of age, showing the influence of home contact as contrasted with school transmission.

The school was closed during a portion of January and from March 23rd to the date of investigation. Following the closing of school, the Clayton family with six members developed four cases, and the Temple family having five members developed one case.

Cultures on blood serum were made from sixteen cases, one having removed and one having died from the disease; on reinspection on May 14, 1915, cultures were made of all cases showing positive results from specimens collected on April 27, except those absent from the township. The results as tabulated follow:

Case No.	Apr. 27 Culture	May 17 Culture	Guinea pig test	Remarks
1	+	+	Death 7th day	
2	—	0		
3	+	+	Death 5th day	
4	—	0		
5	+			Absent 2d visit
6	+			Absent 2d visit
7				Removed
8	—	0		
9				Dead
10	+	—		
11	+	—		
12	+	0		
13	+	+	Well on 7th day	
14	—	0		
15	—	0		
16	+	+	Well on 7th day	
17	—	0		
18				Active disease

The principal feature apparently developed by this tabulation is in confirmation of the opinion that patients developing tolerance to B. Diphtheriae continue as "carriers" for long periods of time. Cases 1 and 3 developed the clinical disease on December 18th and 25th, respectively; cases 13 and 16 on March 6th and April 6th, respectively. In the former, bacilli of low virulence were present after four months; in the latter, bacilli of rapidly decreasing or negative virulence after 50 and 21 days, respectively.

Following the accepted standard, guinae pigs of 250 grams weight should have died from diphtheritic toxemia within 96 hours following inoculation with bacilli of moderate virulence.

In accordance with the findings, the epidemiological diagnosis was based on social contact, primarily with a carrier (Case No. 1), and secondarily through transmission from active clinical cases.

It is noted that ten of the eighteen cases were not reported to the health officer—R. G. Lauer. Some of these were not seen "professionally," others not at all by physicians. The discrepancy, however, serves to indicate one of the reasons for continued diphtheria morbidity, and, in connection with carriers, to suggest one of the future fields of administrative action.

REPORT OF AN INVESTIGATION IN SUNBURY ON ACCOUNT OF THE PREVALENCE OF COMMUNICABLE DISEASE, PARTICULARLY DIPHTHERIA.

In accordance with your instructions, I proceeded to Sunbury, Northumberland County, on January 4, 1915, in order to investigate the unusual prevalence of communicable disease, particularly diphtheria.

With the cooperation of Dr. C. M. Thomas, president of the board of health, and of Mr. Vicor Kobel, health officer, studies were made relative to administration, prevalence and violation of quarantine. The results, in an abbreviated form, are herewith reported.

The board of health at the present time consists of:—

Dr. C. M. Thomas, President.
B. F. Heckert, Esq., Secretary.
Mr. Joseph Morgan.
Mr. Howard Hoffman.
Victor Kobel, Health Officer.

These members were appointed during the spring of 1914 and are continued in office for the year 1915.

They have routinely carried out the methods practiced by pre-existing boards. Hence, in considering these practices, reference must be made to the conduct of public health work during previous years.

The generally accepted idea of duties by municipal boards of health in boroughs and first class townships is that the major expenditures and effort must be devoted to the abatement of common nuisances, the removal of wastes and the correction, in general, of obviously insanitary conditions. The detection, study and correction of the real agents which transmit disease are considered a minor portion of the work. This point of view has long been the guide in Sunbury.

A table of the total morbidity from communicable disease and the appropriations made for public health work in that borough during six years is as follows:

TABLE I.

	Cases. (All forms)	Appropriations.		Cases. (All forms)	Appropriations.
1909,	214	$250 00	1912,	482	$800 00
1910,	594	400 00	1913,	333	850 00
1911,	413	800 00	1914,	540	900 00

The year 1909 may be excluded, as it is believed that more or less thoroughness in reporting (in accordance with the Act of Assembly dated May 14, 1909) was not begun until 1910.

The improvement, judged from the expenditure of money, has been practically nil. I was informed that most of the annual appropriation was devoted to the correction of broken sewers, flooded cellars, drainage of artificially formed ponds, and minor nuisance abatements.

On the other hand, measures to reduce morbidity have been applied in a form so modified that it would seem that this alone would account for annual excesses above other health districts.

In order to insure more prompt reporting, the officers of a previous board had asked that a telephoned report of each case of communicable disease be made, the written report required by law to be made later. This was cordially complied with by the physicians. However, as it usually happens, the *written* reports were soon delayed, then neglected, and during the past two or three years, no written reports have been received. In other words, a legal report is not on file in the board of health records.

The health officer at the time of placarding inquired whether or not children attended public school (there are no parochial schools in Sunbury), and as to the nature of employment of wage-earners. Those not ill were permitted to take up residence elsewhere during quarantine. By this method alone, new foci of disease originated.

Notifications were sent to the public schools, but not to Sunday and private schools. These related to the patient alone, the brothers and sisters usually having removed to other temporary homes, from which they were permitted to continue in school attendance.

Since home contacts were so liberally treated, it followed that studies and quarantine observations of and exclusion of contacts from school, Sunday school and places of work were not attempted. In fact, the minimal amount of work in relation to quarantine was necessary, since the health officer was also truant officer, had charge of garbage collection, made all of the nuisance inspections, and did all disinfecting.

Disinfection of school rooms was performed at irregular intervals—not necessarily because of cases in school; schools were not closed during the incubation period of disease.

Modified quarantine was regularly practiced, but so modified that wage-earners exercised the privilege to attend public places as well as to go to and from work. The provisions relative to isolation of patients could not be controlled by the health officer, nor could evidence of violations of this provision of modified quarantine be discovered. Entrance to quarantined premises by non-residents was believed to be common. However, only two definite instances were recorded, both within a few days of your representative's visit.

One S. S. with others from Berwick entered a house quarantined for diphtheria on January 3rd. They returned to Berwick, where by advice of this Department they were placed under quarantine observation. On January 3rd, S. R., an insurance agent, entered a house quarantined for diphtheria, was arrested by the health officer and sentenced to pay a fine of $50.00 and costs on January 5th.

The evidence is that the present board (and also previous boards) have been earnest and active, but failed as the majority do in that they treated the aesthetic rather than the pathogenic—the result of a point of view all too common with professional as well as lay persons.

A comparative study of morbidity in the larger health districts in Northumberland County was made. The figures for 1914 are typical of all previous years.

TABLE II.

Health District.	Cases (Excluding Tubercu-losis).	Population 1910.	Rate Per 10,000.
Sunbury,	511	13,770	371
Shamokin,	272	19,588	138
Mt. Carmel,	113	17,532	64
Coal Township (first class),	256	16,105	157

Increases in population since 1910 have occurred in the last three. Increases may have also occurred in Sunbury, but the evidence is that it was nil or slight; so that the high morbidity rate, if so influenced, would have been unfavorable to Sunbury.

The evidences are that physicians in Shamokin, Mt. Carmel and Coal Township are as thorough in reporting as in Sunbury. The general belief that foreign-born residents are careless and more difficult to control is negatived by the given rates, for all three districts have a far greater ratio of foreign to native-born than has Sunbury. Accessibility by lines of travel is somewhat greater for Sunbury; however (as noted later), only six of fifty-four cases of diphtheria in Sunbury originated in other health districts.

The evidence in the morbidity rates is that a serious fault in administration has been responsible for Sunbury's excess. A study of the total morbidity by disease during 1914 is presented in the following table:

TABLE III.

Sunbury—1914.

	Diphtheria.	Scarlet fever.	Measles.	Chicken pox.	Mumps.	Pertussis.	Typhoid fever.	Erysipelas.	Pneumonia.	Scabies.	Spinal meningitis.	Total.	Tuberculosis.
January,	3	29	42	10	4	4	2	1	0	0	0	95	6
February,	0	68	44	25	7	0	2	3	0	0	0	149	0
March,	0	35	8	12	9	0	0	2	3	0	0	68	0
April,	0	14	2	4	9	10	0	1	6	0	0	40	1
May,	3	11	4	3	8	9	1	0	0	0	0	39	0
June,	1	0	1	0	4	4	0	0	0	0	0	11	0
July,	2	0	1	0	2	5	0	1	0	1	0	12	1
August,	2	0	1	0	6	2	1	0	0	0	0	6	24
September,	1	0	0	0	1	0	3	0	0	0	1	6	0
October,	6	0	0	0	0	0	0	0	0	0	0	6	3
November,	12	0	2	6	4	0	5	1	0	0	0	30	0
December,	24	1	10	5	2	3	4	0	0	0	0	49	0
	54	158	115	65	50	37	19	9	3	1	1	511	29

Three diseases were in relatively noteworthy excess. *Scarlet Fever* was first reported during October, 1913, a few cases during November and December each, 1913, the excess being first noted in January, 1914. It was alleged by a certain portion of the public that public meetings were responsible for the scarlet fever epidemic which reached its high point during February, 1914. Unfortunately for those who made this charge, after deducting the incubation period of the disease from the sixty-eight February onsets, it is shown that the epidemic was *at its height prior to the meetings* referred to. Coincident outbreaks occurred elsewhere and began *prior* to the meetings.

TABLE IV.

	Jan.	Feb.	March.	April.	May.
Sunbury,	29	68	35	14	11
Shamokin,	18	23	51	37	9
Mt. Carmel,	1	1	3	4	2
Coal Township,	26	35	38	8	10

Passenger traffic was just as heavy between Sunbury and Mt. Carmel as between Sunbury and Shamokin and Coal Township during these months.

One factor in the widespread and continued prevalence of scarlet fever was its very mild clinical expression, many cases being unrecognized, without medical attendance, and in a smaller proportion diagnosed as German measles. However, it is evident that failure to carry out public health regulations and to have an efficient medical inspection service was responsible for the prevalence of scarlet fever so far as the immediate control was concerned.

Measles shows a similar history:

TABLE V.

	Jan.	Feb.	March.	April.	May.
Sunbury,	42	44	8	2	4
Shamokin,	1	1	1	9	2
Mt. Carmel,	0	0	1	0	1
Coal Township,	1	0	0	4	0

It is noted that the maximum in Sunbury was reached during January and February, prior to the unusual public contact factors. Had the latter been responsible for transmission to or from Sunbury from or to the contrasted districts, excesses would probably have followed in the latter.

Measles has recurred in an epidemic form every second year.

TABLE VI.

	1909.	1910.	1911.	1912.	1913.	1914.
January,	--	38	2	20	4	43
February,	--	55	1	55	3	43
March,	--	59	--	157	5	16
April,	6	165	1	116	4	2
May,	8	44	2	24	5	4
June,	9	31	1	6	1	1
July,	5	4	2	--	--	1
August,	1	--	--	--	--	--
September,	--	--	--	2	1	--
October,	--	1	--	--	3	--
November,	--	--	--	2	36	--
December,	--	1	5	--	33	10
	29	398	14	382	95	122

It is noted especially in this table that an epidemic of measles usually continues for from three to six months in the borough of Sunbury. It is superfluous to state that an epidemic should not occur and that the ideal results would be its suppression at least within the time of one or two incubation periods, in other words, within thirty days. That the disease was not under control is indicated by the length and character of its morbidity curve. Apparently, in each outbreak its prevalence ended because all available susceptible persons had developed the disease.

Diphtheria, showing irregular excesses, was more prevalent during 1914 than during any previous year.

TABLE VII.

	1909.	1910.	1911.	1912.	1913.	1914.
January,	--	1	7	7	3	3
February,	1	1	1	2	5	--
March,	--	--	6	3	1	--
April,	--	1	1	--	1	--
May,	--	2	3	--	1	3
June,	--	4	2	--	--	1
July,	3	1	2	1	--	2
August,	3	2	2	--	--	2
September,	3	10	1	2	--	1
October,	3	6	1	2	--	6
November,	4	9	5	2	1	11
December,	6	3	5	1	2	21
	23	40	36	20	14	50

It was the increase of this disease during December, 1914, that led to an investigation. Requests for assistance had been received from officers of the board of health. To that end, an analysis of all available data (collected by the board but without additional census) was made. The results are indicated in the tabulation below.

TABLE VIII.

Case No.	Report Date.	Residence Ward.	School.	Age.	Reference.	Mortality.
1	1/20/14	3	----	1	?	+
2	23	3	----	4	Sister to Case 1,	----
3	30	2	----	30F.	New Jersey four days prior,	----
4	5/ 4	7	----	4	Treverton within incubation period,	----
5	12	8	----	4	?	----
6	29	5	----	7	Visits to Danville,	----
7	6/26	3	----	30F.	?	----
8	7/ 9	6	----	7	Williamsport within incubation period.	----
9	10	1	----	15	?	----
10	8/11	8	----	7	Michigan within incubation.	----
11	12	3	3	10	?	----
12	9/16	3	3	12	?	----
13	10/ 4	8	8	8	?	----
14	4	8	8	6	Brother of Case 13—?,	----
15	17	5	5	13	Camping prior to onset—?,	----
16	23	8	8	7	?	----
17	27	8	8	7	?	----

TABLE VIII—Continued.

Case No.	Report Date.	Residence Ward.	School.	Age.	Reference.	Mortality.
18	30	9	None	4	Only child,	----
19	11/ 9	3	None	2	Only child,	----
20	11	5	2	7	?	----
21	14	8	8	5	?	----
22	14	8	8	8	Brother to Case 21, mother a nurse,	----
23	17	3	None	4	Brother and sister attend third,	----
24	17	6	None	4	Only child,	----
25	17	4	None	5	?	----
26	21	8	8	9	?	----
27	21	8	None	2	?	----
28	21	9	8	8	?	----
29	23	8	8	15	Sister of Case 26, silk mill,	----
30	30	1	Rohrbach	10	?	----
31	12/ 2	8	None	3	----	----
32	3	7	Drumheller	13	----	----
33	12/11	6	Rohrbach	12	?	----
34	12	8	8	8	?	----
35	14	4	None	3	?	----
36	14	4	None	36F.	?	----
37	15	3	None	4	?	----
38	16	8	None	2	Sister in high school,	----
39	16	8	None	6	Only child,	----
40	17	3	None	6	Only child,	+
41	17	3	3	9	Had moved from 8th ward one week prior.	----
42	19	8	Drumheller	11	?	----
43	21	7	Drumheller	7	?	?
44	21	8	Drumheller	9	?	----
45	24	8	None	3	?	----
46	26	3	None	5	Salvation Army,	----
47	27	2	None	29F.	From Shamokin Dam, four days prior,	+
48	29	3	None	24F.	Nurse to Case 46,	----
49	29	9	None	5	Only child,	----
50	30	9	2	12	?Sister of Case 51,	----
51	30	9	None	22M.	?Brother of Case 50, worked in silk mill.	----
52	1/3 /15	7	None	36M.	?	----
53	3	7	None	5	?	----
54	5	9	None	6	?	----

The data is insufficient for a correct epidemiological diagnosis.

The dates of onsets indicate only that the disease became somewhat excessive for the first time during October; the onsets of a large number in the eighth ward suggested a factor common to the group in that ward. The distribution of all cases was as follows:—

TABLE IX.

Wards,	1	2	3	4	5	6	7	8	9
Cases,	2	2	10	3	3	3	6	19	6

Of these six were more or less definitely traced to sources outside the borough:—

In the second ward,	2
In the seventh ward,	1
In the fifth ward,	1
In the sixth ward,	1
In the eighth ward,	1
Total,	6

After October 1st, the larger number of cases occurred in families not having school children. The only undue excess among the latter was in the eighth ward school building, ten being reported during the last three months of 1914, as follows:—October, four cases; November, five cases; December, one case.

Only one case was secondary in the same premises, and in four instances two cases occurred in the same premises with coincident onsets. The widespread location of cases is indicated by these factors.

The age and sex data for the total morbidity gave but little information.

TABLE X.

Age and Sex.

	Male.	Female.	Total.	
Under 1 year,	1	0	1	
Under 1 year,	0	0	0	
Under 2 years,	2	1	3	21 or 38.8%
Under 3 years,	3	0	3	
Under 4 years,	1	8	9	
Under 5 years,	2	3	5	
6-14 years,	14	11	25	25 or 46.2%
15-19 years,	0	2	2	
20-24 years,	1	1	2	
25-29 years,	0	1	1	8 or 15%
30-34 years,	0	2	2	
35-39 years,	1	0	1	
	25	29	54	

The excess of females in those above school age indicates the extent to which intimacy of contact between parent and child was responsible. The fact that 67 per cent. of those becoming ill during December were not in attendance at school suggested that social rather than school contact was a prominent factor. This was fully appreciated, and was, to some extent, the reason for the arrest of violators, as noted above.

In reviewing all information obtained from the records, the method of administration and all general factors, it is evident that customs not founded upon knowledge of methods of transmission and the wrong application of effort have been the underlying reasons for continuously high morbidity in Sunbury. The annual appropriation measured by the population is entirely inadequate, unless the board of health could be relieved of a large measure of the work they now do. The need of a paid medical inspector is apparent, but from personal observation the need of public health articles in the press having local application is just as marked. The board works against the considerable opposition of the private citizen. Each resident—and also each official—has his own idea of each disease, its method of transmission, and the relative value of every act of the board.

This marked individual and independence of thought could be molded by educational press articles into a united support to have a healthy Sunbury.

The weak points were made clear to the board of health, and immediate correction was initiated.

REPORT OF AN INVESTIGATION CONCERNING THE PREVALENCE OF DIPHTHERIA AT DuBOIS.

In accordance with instructions of the Chief Medical Inspector, I went, at the conclusion of my work in Brookville on October 14, to DuBois, Clearfield County, to investigate the undue prevalence of diphtheria in that community. I found that the disease was also prevalent in Sandy Township, which is contiguous to the town on all sides. Because of the close geographical bond between the town and township, it seemed desirable to consider the outbreak as involving one large community. In carrying out this investigation I received the hearty cooperation of Dr. W. J. Smathers, secretary of the board of health of DuBois, Dr. R. R. Jordan, health officer of Sandy Township, and Dr. S. M. Davenport, the company physician to the B. & S. Coal Mining Co. of DuBois.

DuBois is a town of about 13,000 inhabitants. It is situated in the soft coal region, and mining is one of its chief industries. There are several mine shafts near the city, the largest and the one that concerns us being located about a mile and a half east of the town and is usually spoken of as Shaft No. 1. In the immediate vicinity of this shaft there are some fifty houses occupied mostly by miners of foreign origin. The sanitary conditions in and about these houses are bad; overflowing privies and obstructed drainage ditches were frequently seen. There are two school houses at Shaft No. 1, the primary and the grammar. In DuBois the public school system includes five district schools and a high school, the total attendance being 2,716. There is one school in each ward. The parochial school system is housed in two buildings in the first ward just one block distant from the first ward public school. There are six hundred and forty pupils attending this school. Common drinking cups are not used in any of the schools; books, pencils, tablets, etc., are not collected and redistributed, and double seats are not used except in the parochial school, where eight of the eleven rooms are equipped with them. Medical inspection of the pupils had not been instituted in any of the DuBois schools.

The autumn sessions of the various schools began on the following dates: DuBois parochial school, Sept. 1; public schools, Sept. 8; Sandy Township schools, Sept. 13.

The first case of diphtheria occurred at Shaft No. 1 in a little girl, A. A., age six years, with an onset June 28. The family of A. A. had moved to its present home from Mine No. 11, near West Frankford, Ill., about two weeks before. By communicating with the Illinois State Board of Health, we learned that diphtheria had been prevalent for several weeks in and about West Frankford. It is quite possible that the child may have received her infection at her former home. The second case occurred eighteen days later, and from then on cases began to fall ill until a total of twenty-four had occurred in Sandy Township. The spread of the disease was undoubtedly aided by certain conditions which prevailed in this neighborhood. Here the number of children under sixteen years was comparatively large; almost every family visited had from four to six children. The community being small, the children from most of the families intermingled. Among this group of children mild and unrecognized cases developed. This statement is supported by an instance in which two children developed mild sore throats which the physician failed to recognize as diphtheria, and a little later two other members of the same family came down with typical diphtheria. It was also alleged that certain parents would not summon a physician for mild cases hoping thereby to avoid quarantine, but this could not be substantiated. A third factor was found in the irregular quarantine regulations which prevailed. During the early part of the outbreak, the placarding of houses was unduly delayed; in one instance, according to the statement of the physician and the householder, as long as one week intervened between the reporting of the disease and the placarding of the house. After quarantine was established it was usually disregarded by the family. On one of my visits to Shaft No. 1, I found a patient, towards the end of his quarantine, playing cards with a group of his friends several rods from his home. Dr. D. told me that on one occasion he found the mother of a child quarantined for diphtheria going to DuBois to attend the Catholic church. He turned her back home. This illustrates one avenue along which infection may have been carried from Shaft No. 1 to DuBois. The schools at Shaft No. 1 were closed for two weeks without very marked effect on the spread of the disease.

In DuBois the first case was a boy of nine years with onset on August 1. No connection could be traced between this case and those in Sandy Township. The next case occurred August 16, and the third and fourth, a brother and sister, on August 31 and September 1, respectively. None of these children were acquainted and no common bond could be found between them; they may well be looked upon as sporadic cases. Cases one and two entered the public schools when the session began; cases three and four did not. It may be noted here that it seems improbable that cases one and two could have

spread the disease, since it was more than three weeks after the opening of the public schools that a case of diphtheria developed there. On September 4, K. M. developed diphtheria. She attended the parochial school but lived in Sandy Township remote from Shaft No. 1. This girl naturally went to the Catholic church, as did those of like faith from Shaft No. 1. It seems probable that she may have been infected by contact at church. Another case developed in the parochial school on September 15, and thereafter a large number of the cases appearing among school children were among those attending this school, or who had brothers and sisters attending it. It is of further interest to note that a sister of a patient, A. K., at Shaft No. 1 attended the parochial school until September 17. This is another avenue along which the infection may have been spread. In all there have been forty-six cases in DuBois.

If we exclude from consideration the first four cases in DuBois, it will be noticed that there is a gradual spreading of the disease from Sandy Township, to the parochial school first, then to the first and fifth ward public schools, which you will recall are but a stone's throw from the parochial school, and finally to the other ward schools.

The age groups of the entire series of seventy cases are as follows:—

0- 4 years,	12	15-19 years,	3
5- 9 years,	29	20-24 years,	5
10-14 years,	19	25-29 years,	2

No special distribution in relation to sex was found, thirty-three being males and thirty-seven females.

From the grouping according to occupation, it will be noted that forty-five, or nearly two-thirds of all the cases, were school children.

Occupation.

School,	45	Housework,	7
Under school age,	15	Miner,	2
Teacher,	1		

It is also worthy of record that fifty-eight houses had each a single case, and that in each of six homes there were two cases.

The milk supply for this group of cases included twenty different sources, none of which sources supplied more than four families, so that the evidence seems conclusive that milk was not the medium of transference.

In DuBois thirty-seven, or a shade over four-fifths of the cases, were located in the same section of town as the parochial school, first and fifth ward public schools and the Catholic church. Eighteen of the total forty-six cases attended the parochial school or had some member of their family attending this school, giving a morbidity in the 640 pupils of 2.8%. In the public schools there were twenty cases in

a total of 2,716 pupils, making the morbidity rate 0.7%. They were no essential differences found in the two school systems other than that double seats were used in eight of the rooms of the parochial school. All but one case developing in this school occurred in rooms with double seats. There is one clear instance of seat mates developing the disease, E. F. on September 23, and K. G. on October 2.

No effort had been made to follow up contacts outside the immediate family. Immunizing doses of diphtheria antitoxin were administered very generally to family contacts, but school and playmate contacts received no attention. Secondary cases occurring in the same household were very rare, indeed, but four instances were found in the entire seventy cases, which is good evidence of the extent to which immunization was conducted. In DuBois, and for the most part in Sandy Township, cases were promptly reported and placarded.

On October 6, 1915, the board of health issued an order closing all day schools, Sunday schools, churches, theatres, moving picture shows, pool rooms and lodge rooms, until further notice. This order was rescinded October 16, on condition that all said places except churches and lodge rooms should be fumigated with formaldehyde gas. Private dwellings were fumigated with formaldehyde candles.

The spread of the disease was not controlled by the general quarantine order, since eleven additional cases appeared after schools, etc., reopened. This was to be expected, when no effort was made to immunize school contacts or to discover carriers by cultural means.

The school board was advised to institute medical inspection of all pupils until the disease ceased to appear, and the board of health was urged to debar all contacts from school until the incubation period had passed.

REPORT OF DIPHTHERIA IN THE LYKENS VALLEY.

On November 14th, pursuant to instructions from the Chief Medical Inspector, I proceeded to Lykens, Dauphin County. Reports had been received of the prevalence of diphtheria for several weeks, so that the presence of carriers and undiagnosed cases of the disease was suspected.

On reaching Lykens I called on Dr. Lehr and the health officer, Mr. Frank Bueck, who told me that they felt sure there were undiagnosed cases of diphtheria and cases of the disease treated by physicians under other diagnoses, but they were unable to tell me where the cases were. I saw one case of clinical quinsy and a case of clinical laryngeal diphtheria (convalescent), patients of Dr. Lehr, and made cultures of both cases. Subsequent laboratory reports

show a positive culture for the clinical quinsy case and a negative culture for the convalescent croup case. This would bear out the assumption that some apparently clinical cases of tonsillitis are the carriers of diphtheria in this community and account for its prevalence.

I advised Mr. Bueck to try to get positive evidence that physicians had treated diphtheria under other diagnoses, and also of undiagnosed and untreated diphtheria. The prevalence of diphtheria seems to be due largely to the fact that the parents of the children do not call in a physician until the disease is far advanced, during which time the patient remains at large. I impressed on the health officer the importance of urging the parents of the community to call a physician whenever their children complain of "sore throat," and especially to urge the teachers of the schools to carry out the new quarantine law in this respect.

I visited Wiconisco and met and talked with Dr. Royer and Dr. Keiter, who practice there. Neither of them knew of any doubtful "throat cases" in their vicinity. In company with Health Officer Steever, I went to Williamstown and interviewed Drs. Stites, Haas and Shaffer, from whom I learned that there were present no suspicious cases of diphtheria in Williamstown or vicinity, and that although there were evidently untreated cases they knew no way of finding them. I visited the principal of the Williamstown schools, and found out from him that he had made it plain to the teachers about trying to discover cases of sore throat, excluding them from school, and notifying health authorities.

I then went to Elizabethville, where I saw Drs. Stroup, Martyn and Romberger. No diphtheria had been reported and there were no suspects.

POLIOMYELITIS.

NOTES ON THE EPIDEMIC OF POLIOMYELITIS AT ERIE, IN 1915, FROM THE REPORT OF AN INVESTIGATION UNDERTAKEN BY HERBERT FOX, M. D., AND DAMASO RIVAS, M. D.

The following observations were made during an outbreak of epidemic infantile paralysis in Erie and vicinity during September, 1915, when, at the direction of the Commissioner of Health, Dr. Samuel G. Dixon, the undersigned were asked to go there to help the city and to see if anything could be learned of this obscure malady. Application for assistance had been received from the city health officer, Dr. J. W. Wright. The University of Pennsylvania granted us a leave of absence for this purpose.

The history of poliomyelitis in Erie County and City is much the same as in other counties and similar cities in the State of Pennsylvania, in that the disease has been present in more or less sporadic form since 1910. In 1910 there were eight cases reported in the county. In 1912 the city reported one death, and in 1913 two. The continued presence of the disease in this part of the country causes one to think of "place or locality infection" as the origin of the present epidemic. Under the conception of "locality infection" it is assumed that the virus is constantly present in the population, appearing only sporadically, and under some unknown, or at least immeasurable, stimulus spreading more freely and causing an epidemic. Perhaps the term "availability of susceptible individuals" has some bearing on the case. So far as Erie is concerned, the distribution of the sporadic cases from 1911 to 1914, inclusive, has no direct bearing upon the appearance of cases in the epidemic of 1915, since some places visited during the four years were not visited this year, while some places were first visited this year. This is not, however, a new point, as it is customary for centers of epidemics to be free for varying periods after a general outbreak. All that one can say of the situation is that the virus has been present in Erie county and city constantly for five years. The greatest number of cases has existed, of course; in Erie and its surrounding Mill Creek Township. Next to this the eastern half of the county has had more cases, all sporadic in nature, than the western half.

The epidemic of this year may be properly said to have commenced May 6, although there had been one case in January. Appended is a list of all the cases of the year, and the date of onset. The cases may be divided into groups according to the date of outbreak. In the first two weeks of May there were two cases. There were then no cases for over seven weeks, but two appeared in the first week of July, to be followed in the last week of the month by six cases in four days. There was then a break of but five days, after which forty-five cases developed in thirty-four days, there being but seven days scattered through this number upon which no case was reported as developing. Then came a lull of six days with no reported onsets, then one every second day until September 20, on which date three new cases appeared. During the last week of the month four cases developed, after which the epidemic slowly died out, twelve cases being recorded from October 1 to November 3. The last case of our record appeared November 22. It is not uncommon for poliomyelitis epidemics to have fluctuations. This epidemic had its height late in August and a recrudescence late in September.

Family relations and contact of the patients can be dismissed with the few words unfortunately so frequently used in reports of poliomyelitis epidemics. Except for the cases occurring in the same

house, no satisfying ristory of exposure and apparent contagion are to be found. There were six histories affecting eight children (three in one family) in which is noted an exposure to cases or to children who later developed the disease. Four of these histories show that exposure took place during a period of five days antedating the appearance of symptoms and signs sufficient to warrant a diagnosis therefor in the prodromal period. None of these cases was seen by us at a time to permit of any personal comment. One case of exposure occurred two or three days after the appearance of paralysis. The periods elapsing between these exposures and illness varied from five to twelve days. The most interesting and perhaps most significant case, the remaining one of the six histories, is that of C. W., two years, who played with R. R., two and one-half years, on the day paralysis developed and three days after R. R.'s first symptoms. Four days later C. W. was attacked and three days later became paralyzed.

The inquiry into the dissemination of the disease in Erie shows the fact that sixty-four of the cases are known to have been exposed to a hundred and twenty-three children and a hundred and fifty-two adults, among whom only eight cases in children could possibly be explained in this manner, while no attacks occurred in adults. The importance of the adults in carrying infection was investigated thoroughly in one case, a mother, but no children with whom she is known to have associated became ill. While it is, of course, impossible to determine the effect of healthy carriers, we obtained no information of a person or persons who visited affected houses and following whose visits elsewhere other cases developed. Unfortunately we saw only one case of abortive poliomyelitis. Although we were asked to visit and diagnose several acute illnesses in children during our stay in Erie, they were without exception not poliomyelitis, and we found no trace of any number of unrecognized cases. Our diagnosis was based upon clinical observations because it did not seem justifiable to do lumbar punctures on these suspects, and, as there were no monkeys available, nasal swabbing could not be tested biologically.

The relation of sick animals to cases of the disease was thoroughly investigated, and for no case is there a history of association of the patient with any sick lower animal. Only one case lived in close proximity to a stable and no kennels were near the cases. Many families had chickens but none were ill. Paternal occupation includes three teamsters, two fire department men, and one livery stable keeper, and in no place did the family live close to the place of occupation. The paternal occupation represents twelve varieties, among them twenty-two laborers. Nearly all of the laborers are of foreign birth.

Soicial Conditions. Investigation in this direction revealed that most of the cases occurred among persons of humble station, very few among the well-to-do and not many among the abjectly poor. The houses were to be considered good in general hygiene in two-thirds of the cases. Observations in Erie bear out our experience in other epidemics that the disease appears oftenest among persons of simple life, habits and pleasures, and not often among the very filthy. While investigating a certain neighborhood one of us walked through a disgustingly dirty street, the only really bad place we saw in Erie, and upon referring to the list found that no cases were reported from that street.

Insects and Insect Bites. Each case was thoroughly investigated as to the presence of insects in the house. As a rule the number of insects found in the houses was very small, limited to the common mosquito, "culex." The house fly was relatively rare. The presence of bed bugs in the house was denied by all the families, and examination of the furniture in some instances did not reveal their presence. Ants were rather common in some places. Examination of the houses and gardens showed the red ant to predominate; in a few cases black ants were also found. Examination made of the back yard, especially in the poor section of the town, where the garbage disposal was not properly attended, revealed the presence of several species of green flies. It has been reported in the literature recently that some of the green flies (lucilia) act as transmitters of the poliomyelitis virus. This subject was not sufficiently investigated by us because of the fact that the weather became unusually cool during our visit to Erie, and this prevented the normal development of the flies.

Distribution of Cases. One of our first tasks after arrival in Erie was to examine the distribution of cases in the city, done readily by the map supplied us by Dr. Wright, and now on file in the Department. It was seen that some of the cases were vaguely collected into groups and to these we gave immediate attention. Two days were spent in inspecting the neighborhoods between East Sixth and Ninth Streets, East Avenue and City Line in the extreme eastern section, and at the foot of German and Parade Streets nearer the center of the city; shorter times were spent in other groups. We inspected the houses and surroundings, talked to the families, and to neighbors who had had no cases, trying to find some clue. We were rewarded as others have been before, so that it does not seem profitable to outline the details of these groups. Of course, there had been intercourse between families, but when, how and which children were involved, no one could definitely tell us. One of us took specimens of insects from various parts of the city in these group centers.

We cannot pass this part of the subject without some remarks upon the possible effects of the flood of August.* A few over half the cases occurred on the east side of the city, but thirty-seven are to be found on the west side. Only a few were found in the track of the flood, while the majority of the east side cases occurred where the drainage is good. To the group of cases in the neighborhood bounded by Second and Sixth Streets, Holland and Wallace Streets, we gave especial attention, and it did not seem that the families or homes were affected by the flood in any way that would determine the illnesses. The incubation period of the cases in this group, while somewhat regularly spaced in tri-weekly periods, did not coincide with any exposure, or, in the case of four closely studied families, to any change of habitation. The ground drainage of the houses iear the outlet of Mill Creek is good, but it may be worth while to note that these houses are largely built upon made ground. Our records show only two cases occurring in houses affected by the flood, which, however, were repaired and dry. We are of the opinion that the flood had no bearing upon the epidemic either in appearance or distribution. The population is slightly denser on the east side, certainly in the humble families among which many cases occurred.

Geological Considerations. The area involved is so limited that the small gravel and clay pockets would reflect on each other and thereby discount their value as to any influence they might have on insect life or any other possible condition.

Meteorological Conditions. Much attention was also paid to the reports of the United States Weather Bureau, which we have filed with this general report. Examination shows that the temperature range for the whole year has been slightly lower than normal until September, when it is slightly higher due to a severe hot spell in the middle of the month. Humidity records show a slightly high course all through the year. Rainfall was below normal, except in August, when a great excess was noted due to the precipitation of 5.77 inches on the third. Curves plotted to show the range of temperature and humidity fail to indicate any definite relation to the occurrence of poliomyelitis.

Clinical Observations. From a medical point of view, the only marked feature of the epidemic was its mildness. While among eighty-two cases there were five deaths (six per cent.), the average case was of moderate severity and recovery began soon after the attack had fully expressed itself. We saw several old cases and in only one was there a paralysis which will be permanently and seriously disabling. In the two cases seen in the acute stage the mildness of the infection was evident and there are very few records indicating profound toxaemia. Paralysis developed rapidly as a rule. It is

*An account of this flood appears elsewhere in a report of the Division of Sanitary Engineering.

rather interesting that only twenty-one of sixty-four cases had any paralysis of the upper extremities, of which only two were affected in these parts alone. In other words, paralysis of the lower extremity far outnumbered affections of the upper extremity. We have never seen such a preponderance of paralysis in one region.

The sex distribution shows forty-one males and forty-one females, thus failing to present the usual predominance of males. The age limits were two months and thirteen years, with an average of three years and four months.

The morbidity with reference to the population is 82 to 80,000, or one in a thousand, a rather low figure, especially for a rather loosely populated city in which the morbidity is rather high as a rule. There are only two instances of several cases in a family. In one family two children took sick one day and four days later a third child came down. These children had been exposed to a case in its prodromal stage four days before the two became ill. The other instance of multiple cases concerns two children taken sick on the same day and in whom the paralysis appeared at the same time. These children had not been exposed as far as known.

Laboratory Research. On our arrival at Erie, we proceeded immediately to the equipment of the laboratory for the investigation of the cases, thanks to the kind cooperation of Dr. J. W. Wright, health officer of the department of health, and the staff of the Hamot Hospital. The day following our arrival in Erie we succeeded in having at our disposal the laboratories at the hospital. The plan for the work was made as follows:

1st.—The cultivation of the microorganism of poliomyelitis.
2nd.—Examination of the blood, swabs from the nose and throat, spinal fluid and any other material which could be obtained from the patient.

(1) Cultivation of the Organism. For this purpose a medium was made of brain tissue and normal human blood serum. A normal brain was carefully removed from a man who died of lightning on the day we arrived at Erie. A small portion of the brain was put in long, narrow test tubes to which from five to ten cubic centimeters of sterile normal human blood serum was added. The tubes were incubated for forty-eight hours, after which they were examined as to the sterility of the medium. Because of the mild character of the epidemic we were unable to make any special study or isolation of the poliomyelitis virus. In our stay in Erie no death of a poliomyelitis case occurred, and consequently material was not available for the work. The spinal fluid of one case was planted on the medium, but upon examination under the microscope after several days of incubation, no definite result was obtained with the culture when examined by the dark field illumination and by stain preparation.

(2) The blood of only a few cases was examined, but nothing special was found beside a moderate increase of lymphocytes. The percentage of eosinophiles was normal. Blood parasites, sporozoa flagellates, were not found. Examination of the nose and throat revealed no findings with any unusual variation from those normally found in these cavities. The spinal fluid of one case was examined. It showed only a moderate amount of globulin constituents of the liquid and a moderate increase of lymphocytes.

The above represents the result of our work in the very mild epidemic of acute anterior poliomyelitis in Erie City, during the middle of September, 1915. A few cases were seen in the adjoining rural districts but they seemed to bear no relation to the larger group in the city, and indeed differed in no way from the history to be obtained in the ordinary sporadic cases. We are of the opinion that the epidemic was an expression of the existence of a place infection and that it suddenly found a group of susceptible individuals. It is the mildest of four epidemics the undersigned have seen in Pennsylvania.

Our recommendations to the authorities in Erie were to advocate nasal and pharyngeal disinfection with hydrogen peroxide or weak potassium permanganate, and a screening of all the houses. Inasmuch as little is known of the transmission of the disease, we urged that the whole population do the above to exclude all possible sources of infection, notably carriers. We did not advocate closing the schools, as there seemed less reason than usual to consider schools disseminators of virus. The epidemic started before school opened and only a small percentage of the afflicted were of school age.

It is a great pleasure to acknowledge with thanks the kindness of Dr. J. W. Wright, the health officer; Dr. Tredway, pathologist to the Hamot Hospital; other members of the staff of that institution: and all the physicians of the city whose cordial cooperation made pleasant and profitable our stay among them. The officers of the city government were also most courteous and helpful.

Titusville. On September 17 we received a telegram asking us to visit Titusville, in Crawford County, because of the existence of two cases in that city. We went there next day and were joined by the city officials, health board, and most of the physicians of the place. A meeting was held at which all points of our clinical and epidemiological knowledge of poliomyelitis were discussed, and at which we made the same recommendations as at Erie. We then saw two cases under the care of Dr. J. C. Wilson. Their history proved interesting and is appended. This is not a unique case of apparent transmission by a third party, as such cases have been known before, in fact one of us (F.) reported an instance in the 1907 Report of the Pennsylvania Department of Health. We believe, however, that the outlines of such histories should be placed on record.

M. A. H. was taken ill September 7 and was paralyzed four days later. Three aunts, one of whom made her home with the family of M. A. H., had visited Erie for one day about August 15. They visited many places in the city, but it is not known that they saw any child with poliomyelitis or who afterward developed it. These women brought two children from a charitable home in Erie to Titusville. No cases were reported from any eleemosynary institution in Erie. All the aunts fondled this M. A. H. within a day or so after returning from Erie, and on August 22 the children who came from Erie played with the baby. These children were not known to be ill in any way; they also played with other children, how many is not known. In the party of children playing together, August 22, was a cousin of this baby, J. H., two years old. On September 7 she also became ill. As far as the families could recall, these two cousins had not been together since the 22nd of August and had not seen the Erie children. No other cases were present in the city of Titusville and none have been reported from there in five years.

CASES OF POLIOMYELITIS IN ERIE IN 1915, BY ONSET, SEX AND AGE.

Onset.	Sex.	Age in Years.	Onset.	Sex.	Age in Years.	Onset.	Sex.	Age in Years.
Jan. 8,	F.	2 years	Aug. 18,	M.	5 years	Sept. 5,	F.	4 years
May 6,	M.	3 years	Aug. 19,	M.	13 years	Sept. 5,	M.	2½ years
May 12,	F.	21 mos.	Aug. 21,	F.	5 years	Sept. 11,	F.	4½ years
July 3,	M.	2 years	Aug. 22,	F.	3 years	Sept. 13,	F.	1 year
July 7,	F.	5 years	Aug. 22,	F.	8 years	Sept. 13,	M.	2 years
July 17,	M.	3 years	Aug. 23,	F.	1 year	Sept. 15,	M.	4 years
July 26,	F.	5 years	Aug. 23,	M.	2 years	Sept. 18,	M.	4 years
July 27,	F.	3 years	Aug. 24,	M.	1 year	Sept. 20,	F.	2 years
July 28,	F.	3 years	Aug. 24,	F.	4½ years	Sept. 20,	M.	5½ years
July 28,	M.	*1 year	Aug. 25,	M.	5 years	Sept. 20,	F.	7 years
July 29,	M.	3½ years	Aug. 25,	M.	2 years	Sept. 25,	M.	3 years
July 29,	F.	3 years	Aug. 27,	M.	13 years	Sept. 27,	M.	5 years
Aug. 3,	F.	*13 mos.	Aug. 28,	F.	4 years	Sept. 28,	M.	3 years
Aug. 4,	F.	3 years	Aug. 28,	F.	15 mos.	Sept. 29,	F.	2 years
Aug. 5,	F.	13 mos.	Aug. 28,	M.	3 years			
Aug. 6,	F.	18 mos.	Aug. 28,	M.	1 year	Oct. 1,	M.	11 mos.
Aug. 6,	F.	5 years	Aug. 29,	F.	20 mos.	Oct. 1,	F.	2 years
Aug. 7,	F.	2 mos.	Aug. 29,	F.	8 mos.	Oct. 3,	M.	5 years
Aug. 9,	M.	3½ years	Aug. 30,	M.	3 years	Oct. 8,	M.	8 years
Aug. 10,	F.	6 years	Aug. 31,	M.	3 years	Oct. 10,	M.	2 years
Aug. 11,	F.	4 years	Aug. 31,	M.	2 years	Oct. 11,	M.	3 mos.
Aug. 12,	M.	2 years	Sept. 1,	F.	3 years	Oct. 15,	M.	*5 years
Aug. 14,	F.	*6 years	Sept. 1,	M.	11 weeks	Oct. 17,	M.	7 years
Aug. 14,	M.	3 years	Sept. 1,	F.	2 years	Oct. 23,	M.	*2 years
Aug. 15,	F.	3 years	Sept. 1,	M.	11 mos.	Oct. 26,	F.	17 mos.
Aug. 15,	M.	2 years	Sept. 1,	F.	3 years	Oct. 30,	M.	20 mos.
Aug. 17,	F.	11 years	Sept. 3,	F.	2 years	Nov. 3,	M.	3 years
						Nov. 22,	F.	4 years

*Died.

CASES OF POLIOMYELITIS IN ERIE IN 1915, BY AGE AND SEX.

Age By Years.	Male.	Female.	Total.	Age By Years.	Male.	Female.	Total.
0-1,	4	2	6	7- 8,	1	1	2
1-2,	4	9	13	8- 9,	1	1	2
2-3,	10	6	16	11-12,	0	1	1
3-4,	11	9	20	12-13,	1	0	1
4-5,	2	6	8	13-14,	1	0	1
5-6,	6	4	10				
6-7,	0	2	2		41	41	82

SMALLPOX.

INVESTIGATION OF ALLEGED SMALLPOX CASES AT DICKSON CITY, LACKAWANNA COUNTY.

On December 18, 1915, by the direction of the Chief Medical Inspector, I proceeded to Dickson City, Lackawanna County. In company with Dr. J. C. Reifsnyder, county medical inspector, and Dr. Cantor, of Dickson City, I saw four patients in one house and one in each of two other houses. The houses were close to each other in very filthy surroundings, and in one instance very much overcrowded. All houses were placarded for chicken pox, but held under absolute quarantine, as the county medical inspector had reasonable doubt that the disease might be mild smallpox or varioloid.

In the first house were four cases. A girl of nine years, showing an excellent cicatrix of a vaccination performed six years ago, had the most marked case of the disease, showing numerous, variously sized vesicles and pustules sparsely distributed over the face, chest and limbs; no eruptions on palms or plantar surfaces. Eruptions were rather superficial and lacked a firm "shotty" sensation on palpation. The lesions were rather easily ruptured, proving to be unilocular and containing serum and sero-pus. There was a history of an attack of headache, fever and sore throat about a week previously which the attending physician was inclined to regard as the onset of the attack. Lesions had appeared in several crops. The suspicion of smallpox was raised because of possible prodromal symptoms suggesting the prodromes of smallpox, and also because many of the lesions became pustular and on account of the prevalence of mild smallpox in the neighboring towns. In this same family were five other children, none of whom had been vaccinated and three of whom had a few vesicles and pustules scattered over their bodies. One of the other children had only four vesicles and one or two pustules. The fact that the severest of these mild cases was in a vaccinated person and that the disease was even milder in the unvaccinated, and that none of these lesions seemed deeply situated

and all were unilocular and rather easily ruptured, seemed to exclude smallpox or varioloid; but in order to take no risks, I advised that vaccination of contacts be practiced and absolute quarantine be continued for two days longer, subject then to the decision of the county medical inspector.

In each of the other two houses was one case showing the disease in a milder form in one vaccinated and one unvaccinated child, but with no pustular lesions. These cases seemed rather clearly to be chicken pox.

REPORT OF INVESTIGATION OF SMALLPOX IN JESSUP AND MARSHWOOD, LACKAWANNA COUNTY.

On November 27, 1915, in compliance with instruction from the Chief Medical Inspector, I proceeded to Scranton, where I consulted with Dr. J. C. Reifsnyder, the county medical inspector, over the local health conditions. (Rumors had it that for some time past an eruptive disease had been in existence in the mid-valley towns, being extremely mild, passing as "grain or straw itch," or as "pimples.") Probably among those cases were some mild cases of smallpox. The disease seemed to be centered in Jessup, which is a town of 8,500 and seven miles northeast of Scranton. It is contiguous to Peckville, the population of which is about 6,000. Both towns are closely built up, but differ greatly, in that Jessup is composed largely of a foreign element, which has an utter disregard for sanitary conditions, while Peckville is made up mostly of Americans, and sanitary measures seem to be better carried out. Jessup is one of the filthiest towns in the valley. It is not provided with a sewerage system and even cesspools are lacking in many instances, so that there are a number of houses where all wash water and other waste is thrown on the surface, with the consequence that pools of filthy water and other refuse matter are of frequent occurrence, making the region very offensive. Cast off clothing, tin cans and other rubbish litter the premises in many places. Many of the houses are very badly constructed, in bad repair, much overcrowded and very dirty within. The board o fhealth of Jessup has been inactive for a long time, so that communicable diseases have neither been reported nor quarantined; consequently there have been a large number of cases of scarlet fever, diphtheria and measles. I found out that in a measure in all the mid-valley towns quarantine law had been disregarded utterly or very loosely enforced for a long period of time, and the vaccination law had been ignored to such an extent that in some instances teachers did not know of its existence.

In company with Dr. Reifsnyder on November 28th I went to Marshwood, which is four miles east of Jessup, over the Moosic Mountain, and populated almost entirely by miners who work in the Moosic Mountain Mine, the superintendent of which is Mr. Ford. There was one case of mild smallpox in Marshwood, a four year old Italian boy who was taken ill on November 21st, as nearly as could be ascertained. There was a history of an unsuccessful vaccination several years ago. The type of the disease was extremely mild, so that the child was not ill enough to be in bed at any time and had a very scanty eruption. Mr. Ford assured us of hearty cooperation, and we found out subsequently that a most thorough vaccination campaign was instituted and no other cases of smallpox developed in his community.

We visited Throop which is about four miles from Scranton, also a mining village, and interviewed Dr. Murray, the secretary of the board of health. He admitted that the board of health had been very inactive and that doctors had not been reporting communicable diseases, and that quarantine regulations had been very lax. He promised to enforce the law vigorously thereafter. There had been a great number of cases of diphtheria, scarlet fever and measles in Throop, so that the schools had been closed for the past ten days.

The Situation in Jessup. In Jessup we saw Dr. F. T. Cavill, secretary of the board of health. He admitted that the same lax state of affairs existed there as in Throop. With Dr. Cavill I saw the three cases of smallpox reported there. Case I, U. U., was a man, 27 years old, who had been vaccinated in childhood. He had undoubted smallpox (varioloid) with very discrete widely scattered lesions and was so slightly ill that he had not been confined to his bed but had been at large until his condition was suspected by his physician, the diagnosis established by Dr. Reifsnyder, and quarantine instituted November 23rd. The patient worked at Marshwood but boarded at the Santinelli Hotel in Jessup. He was taken sick about November 17th, as near as could be found out. It has been assumed that he contracted the disease in Marshwood from some of the very mild cases of smallpox there which had passed for "Hungarian Itch." The physician who had been attending U. U. informed Dr. Reifsnyder that for months he had seen "queer rashes" on children and adults in Marshwood, but evidently he had not suspected their true nature. This patient, boarding at the Santinelli Hotel, came in contact with many persons in Jessup while in the active stage of the infection.

Case II, P. B., Italian boy, 4 years old, ill since about November 24th, diagnosed November 27th. Had a very few lesions (firm, small red papules) on the chest anteriorly and posteriorly, very few on the limbs and face; six contacts in the house. Had never been vaccinated. Case considered as mild smallpox.

Case III, O. L., Italian boy, 5 years old. Onset about November 26th. Never vaccinated. Eruption consisted of macules and firm, small, red papules, but very sparse. Diagnosis made November 29th. Patient lived next door to P. B. (case II).

Case IV, M. F., American, 2 years old, female. Onset about November 24th. Never vaccinated. Eruptions were papules and generally distributed, but very few. Diagnosis made on November 30th.

Case I visited the houses where cases II and III lived about a week or ten days before he was quarantined, so that if we consider a short incubation period the probability is quite strong that he carried the infection to them. It was practically impossible to get accurate information as to the exact dates of onset of the cases because the patients nor their parents could not definitely recall when they had been taken ill, the initial symptoms being so mild, and because with one exception we were dealing with Italians and could not get an interpreter. The source of the infection of case IV has not yet been determined. All cases were so mild that none had to be in bed and cases II and III were discovered during a routine house to house vaccination.

I met with the board of health and school board of Jessup and Olyphant, respectively, and detailed the requirements of the law relating to quarantine and vaccination, and gave suggestions about dealing with the local health conditions. Vaccination of all unvaccinated and revaccination of all those who did not have a successful vaccination in the past seven years was strongly advised. In Jessup house to house vaccination was carried out and mill and mine employes in large numbers were vaccinated. This was materially aided by articles and very able editorials in the Scranton newspapers, so that people had their attention called to the prevalence of smallpox and the importance of vaccination.

A general sanitary clean up was started in Jessup and in the neighboring towns as well, to a certain extent being vigorously carried out by sanitary inspectors from the Engineering Division, who also investigated the milk supply and served orders for the abatement of nuisances.

On returning from Scranton the following letter was sent to each physician practicing in Lackawanna County in the region of Scranton:

"December 4, 1915.

"Dear Doctor:—

"You are aware that at the present time smallpox of a very mild type is prevalent in your vicinity and up to the present moment the original case has not been found and may still be at large disseminating infection. It is evident that smallpox existed for some time unrecognized and that there are many contacts in the various mid-valley towns.

"In order that no case may go unrecognized you are urged to watch carefully any of your patients showing moderate fever, headache and general bodily pains which,

under ordinary circumstances, would pass as a case of 'la grippe.' Such cases should be kept under observation for at least three days after fever and pain subside and examined for any rash, and where an eruption appears that is not clear to you, an appeal to the county medical inspector will at once bring you expert counsel. By careful observation of cases of slight illness and search for skin eruptions, patients suffering from this type of smallpox will be discovered before they become a public health menace.

"All unvaccinated persons in your community should be vaccinated, and it is well to recommend revaccination to all those who have not had a successful vaccination in the last seven years.

"Careful cleansing of the site of the vaccination with soap and water followed by 65% alcohol is generally recognized as a safe method of preparation. Subsequently the vaccination should be treated as a surgically clean wound. It is advisable to impress upon your patients, especially the parents of children, that neglect of a recently performed vaccination is responsible for the sore arms that sometimes follow it.

"It is only by the cooperation of every physician and by the utmost vigilance on their part that smallpox can be prevented from gaining a foothold.

"Very truly yours,

"SAMUEL G. DIXON."

The following letter was sent to each principal of each public and parochial school in the mid-valley towns.

"Dear Sir:—

"You are aware that at the present time smallpox of a very mild type is prevalent in your municipality and up to the present moment the original case has not been found and may still be at large disseminating infection. It is evident that smallpox has existed for some time unrecognized and that there are many contacts in the various mid-valley towns. Department representatives have found unvaccinated children who have been attending your schools. This is a direct violation of a mandatory Act of the Assembly of June, 1895, a copy of which is enclosed.

"We are also enclosing a copy of Act 268 of May 28, 1915, and invite your attention to Section 9, requiring teachers and those in authority in schools to exclude from school and report to the health authorities any child showing an 'unusual rash,' or complaining of sore throat, or having symptoms of whooping cough or disease of the eye. It is only by strict compliance with this law that epidemics in schools can be minimized or prevented. Section 10 of the above mentioned law also requires a certificate from the health authorities before any child excluded by the provisions of this act may be readmitted to school.

"Your cooperation is desired in enforcing all the requirements of the aforementioned acts."

SCARLET FEVER.

INVESTIGATION OF AN OUTBREAK OF SCARLET FEVER AT GETTYSBURG COLLEGE DURING NOVEMBER.

By direction of the Chief Medical Inspector, I proceeded to Gettysburg on November 20th, and with the assistance of Dr. Henry Stewart, secretary of the local board of health, investigated a small outbreak of scarlet fever in the college.

This disease had been moderately prevalent for the previous ten days, six cases having been reported in the town. On the evening of November 17th two cases of scarlatina were reported from among the student body of Gettysburg College. Immediately when the news became known the greatest amount of confusion reigned among the students and thirty-one were reported to have left the town early on the morning of the 18th. The college authorities were ordered to institute immediate quarantine of the entire student body, but appeared utterly powerless to enforce it, so that by the 20th fourteen more were reported as having left, but twenty-one of the original thirty-one who left had returned.

The two students in question were taken ill on November 14th and 15th, respectively. They roomed in the "Old Dormitory" but did not live on the same floor. Dr. C. G. Crist, the attending physician, reported the cases at once to the local health authorities, and the building was fumigated after the patients had been removed to the observatory building for isolation. About a hundred and thirty-seven students room in this dormitory, but it is impossible to determine how many "intimate contacts" there were as all students mix regardles of classes at chapel each day and they take their meals promiscuously in the town. The two patients had been in Harrisburg on the 13th of November, but had not been in contact with any cases of scarlet fever to the best of their knowledge. They took their meals at a students' boarding house where twenty-six students boarded. The source of the infection could not be traced to the milk or to the cook or waitress at this boarding house.

The observatory where the patients are quarantined is a small building situated in the center of a large field and well isolated from other buildings. It unfortunately has no toilet facilities and no running water. A graduate nurse is in charge of the patients and she uses formaldehyde to disinfect all discharges. The food is left at the door and no dishes or clothes are removed from the place. The two patients are only mildly ill. They were ill with a sore throat about twenty-four and forty-eight hours, respectively, before calling in the physician.

The college authorities do not appear to have accurate records about where each individual student boards, nor do they appear to have accurate records of the home street address of their students, so that one could readily trace those students who left precipitately.

A canvass was made of 222 students as follows:

Number who have had scarlet fever,	38
Number who are uncertain whether they have had scarlet fever,	4
No report obtainable from,	18

All students deny knowledge of any recent contact with a case of scarlet fever, so the source of the present outbreak is still uncertain.

No subsequent cases developed and quarantine was raised on November 25th, eight days having elapsed from the time of last contact with those taken ill.

SCARLET FEVER AT LEHIGHTON.

I proceeded on April 17, 1915, to the borough of Lehighton to investigate cases of alleged carelessness on the part of the board of health of the said borough to carry out proper precautions and regulations at the time of the epidemic.

The first case of this epidemic seems to be the case in the Heatherington family.

History of the Heatherington Case.

The Heatherington family moved from West Chester to Lehighton about November 1, 1914.

Mr. Heatherington was employed by the Lehigh Press Works, of which Mr. E. P. Jennings is superintendent.

The Heatherington family lived at the Exchange Hotel. They had two children, a boy and a girl. The boy was taken sick on November 22d, complaining of sore throat.

Dr. J. A. Trexler, Lehighton, was called in to attend him; gave his diagnosis as diphtheria, and it was so reported to the board of health and to the supervising principal of the Lehighton schools, Mr. B. M. Shell.

The board of health placed a placard on the bed room door occupied by this family in the Exchange Hotel. This door opened directly onto one of the halls of the hotel.

No attempt was made to isolate this room from the rest of the hotel, and it is reported that when Mr. Montz, manager of the hotel, tried to rent rooms on that floor to guests of the house the guests refused to take rooms on that floor because they felt that proper precautions had not been taken to prevent the spread of the disease.

The placard was only kept on the door of this bed room for ten (10) days, after which the boy and girl of the family were allowed to mingle with the rest of the guests of the hotel, and nothing more was heard about the matter until the boy returned to school about the middle of January. The teacher asked him for a medical certificate or permit. The child replied that Doctor Trexler said that he did not need a certificate.

The Bisbing Cases.

Aaron Bisbing was also a guest at the Exchange Hotel at this time. He was taken sick on Sunday, December 13th. Dr. Charles

Horn, Lehighton, who is also president of the board of health of the borough, was called to attend him, and diagnosed the case as "pneumonia" and so treated it.

On Tuesday, December 15th, Dr. Horn allowed the young man, Aaron Bisbing, to be transferred from the hotel to his home at No. 250 South Ninth Street, Lehighton.

On Sunday, December 20th, a sister of Aaron Bisbing, Charlotte Bisbing, aged 17, living at her home, No. 250 South Ninth Street, Lehighton, was taken sick. She was treated by Dr. Horn, who diagnosed her case as tonsillites. Her older sister, Myrtle Bisbing, suggested to Dr. Horn that Charlotte ought to have diphtheria antitoxin. She asserts that he did not wish to use it and waited still another day when Myrtle insisted that he should give Charlotte antitoxin. He replied that if he gave Charlotte antitoxin it would mean that every member of the family would have to go out of the house and stay out, or they must stay in the house after antitoxin had been given.

Meanwhile, another sister who works at Palmerton in the office of the New Jersey Zinc Company was going back and forth to her work and mingling with the people of that borough.

Miss Myrtle Bisbing states that she called the attention of Dr. Horn to the fact that her sister, Charlotte, had a rash which covered her body, face and hands, and upon insisting that the doctor tell her the nature of the rash, he replied that "it was simply due to the fever."

Finally on the evening of Tuesday, December 22d, Dr. Horn consented to give Charlotte antitoxin on the insistence of her sister, Myrtle. Charlotte's temperature was then extremely high, so Myrtle reports, and it was very difficult for her to swallow. Even at that time Dr. Horn insisted that it was "nothing but tonsillitis." He gave two injections of antitoxin that night.

He had four members of the family go out of the house to various homes of friends in the borough of Lehighton, instructing them first how to take disinfecting baths. He allowed them to take their clothing, however, without having it first disinfected.

The mother and a younger sister, two little boys, the father and the brother who was convalescing from what was termed "pneumonia" remained in the house.

The members of the family insisted on Tuesday, December 22d, that Dr. Horn call in consutation Dr. W. K. Kistler, also of Lehighton, the following morning if Charlotte were not better. Dr. Horn replied, "yes, certainly, get Dr. Kistler and I will leave the case gladly."

The next morning, December 23d, Dr. Horn came without Dr. Kistler, but the family insisted that he be called at once. Dr. Horn went to get Dr. Kistler but reported that Dr. Kistler would be unable

to come until 4 o'clock that afternoon. The consultation was then held the latter part of the afternoon. Dr. Horn reported to the sister, Myrtle, that they had decided that "it looked like scarlet fever."

After consultation, the two doctors working together, three more injections of antitoxin were given Charlotte Bisbing.

It is also reported that after consultation Dr. Horn said to Myrtle Bisbing, pointing to one of the little brothers, Loren, "he is in for it, too;" and yet he did not give him antitoxin.

Thereafter the two doctors attended the case together continually.

The next morning Loren was in bed. Doctor Kistler told the parents that "Charlotte and Loren have scarlet fever," and undoubtedly they got it from Aaron, the brother who had been brought home from the Exchange Hotel and treated by Dr. Horn for "pneumonia," and yet Dr. Horn, that very morning, had the house placarded for diphtheria.

By this time Myrtle reports that Aaron was "peeling" and Charlotte was covered from head to feet with a bright scarlet rash.

Charlotte lived until Saturday, December 26th. The funeral was conducted under the usual precautions in cases dead of scarlet fever.

The day of the funeral the diphtheria placard was taken down and a scarlet fever placard was put up.

On January 19, 1915, another brother, Chester, aged 19, one of the brothers who left the house when Dr. Horn gave antitoxin, was taken sick. He was attended by Dr. Roger Rupp, who diagnosed his case at first as tonsillitis; later, however, he changed his diagnosis to diphtheria, and gave the patient two injections of antitoxin. The house was then placarded and put under quarantine.

The Shive Family.

The latter part of December Dr. Horn was to attend a confinement case at the home of Robert Shive, the family living two doors to the north of the Bisbing family. Dr. Horn suggested to Mrs. Shive that inasmuch as he was attending scarlet fever cases at the Bisbing family she had better call in another physician. He claims, however, that she insisted upon having him attend her.

While there he occupied a bed which was afterwards used by a two year old girl, Helen, of the Shive family, who came down with scarlet fever January 2, and died on January 21.

The Sebring Boy.

On December 19, 1914, a 13 year old boy, George Sebring, played with the Bisbing children, and on December 21 he came down with what his attending physician, Dr. Trexler, pronounced scarlet fever. The house was not placarded nor was it put under quarantine. He was out of school according to the school register December 21, 22,

23 and 24; then came the Christmas vacation of about ten days; the child was out of school on the morning of January 4, but was re-admitted on that afternoon. Myrtle Bisbing affirms that Mrs. Sebring entered the Bisbing home while it was still placarded and under quarantine.

The Brong Cases.

Mrs. Brong, living at and having a store on the corner of First and Lehighton Streets, has five children who it is reported played with the Heatheringtons who lived in the Exchange Hotel.

These children were attended by Dr. Balliett, Lehighton. He did not pronounce any diagnosis, but the mother, Mrs. Brong, told neighbors that she knew the children had scarlet fever. The house was not placarded or put under quarantine. I was unable to see Dr. Balliett. This fact, however, I did confirm, that Rena Bartlett, aged 26, living at Lehighton, visited the Brong children and held one of them in her lap; five (5) days afterwards, January 26th, she came down with a disease and died on January 31st. Dr. Dreibelbeis attended Miss Bartlett and diagnosed the disease as scarlet fever. The house was placarded and put under quarantine January 31st, and it is reported that it would not have been placarded then had not the Episcopal minister, Rev. Mr. Breese, complained personally to the board of health.

I found further that Mrs. Bartlett told Dr. Dreibelbeis that she believed her daughter contracted the disease at the Brong house, and that Dr. Dreibelbeis went to Dr. Balliett and asked him why he had not quarantined the Brong home. Dr. Balliett said that they had not had scarlet fever, but admitted, however, that the children did have a "rash," and when he was asked what "rash" it could be, he replied that "it was a new kind of rash going around."

A Case of Negligence.

Another case of gross negligence on the part of the board of health is as follows:

A family by the name of Smith, living at No. 406 Mahoning Street, had a child, Brace T. Smith, aged 13, who came down with scarlet fever on December 21. The house was placarded and while the placard was still on the house the family was moved by means of a moving van to No. 381 South Third Street, Lehighton. The placard was taken down from the former house after the furniture and sick child had been moved and it was placed on the new home at No. 381 South Third Street. So far as I can learn no precautions were taken by the men who did the moving to disinfect themselves and their van after the moving. I was unable to ascertain name of people who did the moving.

Dr. Dreibelbeis attended the case.

The Dunkel Case.

An 8-year old son of the Dunkel family developed scarlet fever in the early part of January. Dr. Dreibelbeis attended the case and pronounced it scarlet fever on Wednesday. The doctor did not see the patient again for two days. He reported the case as scarlet fever on Friday. The placard was not put up until Saturday morning, and meanwhile another son of the Dunkel family delivered newspapers and was allowed to go in and out as he pleased even after the placard was placed on the house and quarantine was supposed to have been established.

The Dierkes Cases.

On March 21, Isabel Dierkes, aged 6, was taken sick. That evening Dr. Balliett was called and diagnosed the disease as scarlet fever on the 23d, and on the same day gave antitoxin. Isabel Dierkes died April 14th.

March 22d, Margaretta Dierkes was taken sick, diagnosed as scarlet fever and died on March 30th.

Dorothy Dierkes, onset Tuesday, March 23d; two days later a scarlet rash appeared all over body, so mother reports. Doctor called it scarlet fever and administered antitoxin.

Carolyn Dierkes, onset March 28th; scarlet rash appeared in about two days.

The Dierkes cases are the most recent and the only cases which I was able to find existing in the borough at the present time.

I might say, however, that I found it extremely difficult to get into communication with the members of the board of health or with the directors. The office of the board of health was closed and the directors all seemed to be out.

Mahoning Township Case.

The following case reflects somewhat on the work of the Department's health officer; I was unable to see him.

Mr. Charles Lobin, occupation, milkman, lives in Mahoning Township, just outside of Lehighton Borough, on Mahoning Street.

Mr. Lobin's 12-year old son, Charles Lobin, was taken sick the 28th day of November. Dr. W. K. Kistler was called and diagnosed the case as diphtheria.

The house was placarded for only four (4) days. During that time Mr. Lobin says that he slept in the barn but that he delivered milk every day in town.

He took pride in telling Mrs. Bisbing that when they had diphtheria he delivered milk all the time and was quarantined for only four days. He admitted to the writer that the boy was riding around with him on the milk wagon in about ten (10) days after the onset of the disease.

CHICKEN POX AT BLOOMSBURG, PA.

According to instructions, I proceeded to Bloomsburg, Columbia County, on April 8th, in order to comply with the request of Dr. J. T. MacDonald to establish the diagnosis in an eruptive disease.

The patient, Wilison A. Kramer, aged 41 years, became ill on Thursday, April 1st, and developed the first signs of eruption on Saturday, April 3rd. He was seen on Sunday evening, April 4th, by Dr. McDonald, but a diagnosis was not established, and he was not again called in consultation until Wednesday, April 7th.

The patient gives the following history: Between March 16th and 19th he visited in Pine Township, Columbia County, on both the first and last days having been in contact with cases of chicken pox in that township. Since that time he has not been in contact with known cases of communicable disease and the history of his movements and his continuance at work would seem to exclude any but the most promiscuous contact. His family consists of himself and wife, two children, twins, having died in infancy with cholera infantum. Neither Mr. Kramer nor his wife had been vaccinated nor have they previously had attacks of chicken pox.

A careful review of the clinical history led to the establishing of the definite diagnosis of chicken pox, in which Dr. J. E. Shuman, secretary of the board of health of Bloomsburg, concurred.

CHICKEN POX AT DUNCANNON, PA.

In accordance with your instructions, I visited Duncannon, Perry County, on June 14, 1915, in order to comply with the request of Dr. B. F. Beale for consultation.

The patient, Mary Stambaugh, aged 8 years, the daughter of Mrs. Mary Stambaugh, had been tentatively diagnosed as having smallpox; the onset of her disease was on Friday, June 11th, marked by moderate degree of headache and sligth pain in the upper abdomen. She developed a few lesions on the skin on the same date and it was said that all of them had appeared by Saturday, June 12th. They were primarily vesicular, some being very large, particularly on the forearms, coalescence occurring between a relatively large number, followed by pustulation and umbilication at the time of desiccating.

A careful study of the lesions showed that they were superficial, unilocular, generally distributed over the trunk, head and extremities, though none were found on the palms of the hands or soles of the feet.

The patient had been successfully vaccinated at two years of age and showed a typical vaccinal scar on the left arm. She had not previously had chicken pox.

The members of the family consisted of the mother (successfully vaccinated) and two brothers (unvaccinated) with negative history of chicken pox. No member of the family had been absent from home except the mother, who had visited her husband in a hospital in Harrisburg some three or four weeks previously. There is the history of chicken pox (more or less prevalent) in the borough of Duncannon up to two or three weeks prior to the time of consultation.

A diagnosis of chicken pox was established which, however, met with the disapproval of Dr. Beale. Two days later he again requested consultation, stating that he felt convinced that the case was one of smallpox. He was requested to invite Dr. A. R. Johnston, county medical inspector, to visit the patient with him, who established a diagnosis of chicken pox. Five days later Dr. Beale called and stated that he had located a patient having chicken pox, undiagnosed and unreported, who had been a playmate of the patient, and that he concurred in the diagnosis of chicken pox.

REPORT OF THE INVESTIGATION OF AN ALLEGED CASE OF WHOOPING COUGH IN MOORE TOWNSHIP, NORTHAMPTON COUNTY.

It was reported by Dr. E. M. Green, chief medical inspector of Northampton County, that an alleged case of whooping cough existed on the premises of Mr. L. R., of Moore Township, and that the householder had refused admission to Health Officer Siegfried, of Bath, and to Dr. M. W. Phillips, of Chapman's Quarries, who had been deputized by Dr. Green to examine the patient. Acting on the advice of your secretary, I proceeded on December 9th to Bath and in company with Dr. Phillips repaired to the premises of Mr. R. On stating my business I was at first refused admission, but on proving my authority I was admitted and examined the child. The patient was a male infant, eleven months old, who had been in good health, but in the past week had developed nasal catarrh and a productive cough. The cough was not paroxysmal, nor particularly marked at night, and was not associated with a whoop or followed by vomiting. I succeeded in provoking a cough and satisfied myself that the diagnosis of whooping cough could not be justified on the present conditions.

The father of the patient, Mr. F. R., and the grandfather, Mr. L. R., tried to explain their antagonism to the health authorities by

saying that the health officer had acted very harshly. They had refused Dr. Phillips admission because he had no written authority to prove that he had been deputized and they thought he had come for personal reasons. I read sections of the quarantine law relating to the penalties for refusing admission to a health officer, and I feel sure that in the future there will be no misunderstanding.

INVESTIGATION OF BOOK LOUSE NUISANCE (ATROPOS DIVINATORIA) IN UPPER PAXTON TOWNSHIP, DAUPHIN COUNTY.

While in the vicinity of Elizabethville, I was directed to proceed to the farm of S. W., of Upper Paxton Township. On November 16th, in company with Health Officer Lentz I visited the farm. It had been reported that the house of W. was infested with pediculi and that through him the churches and his neighbors had been infested with them. I inspected the premises and found that in the attic of his house along the rafters were a number of small, slender insects, dirty white in color and averaging a sixteenth of an inch in length. These had been there in great quantities several days before but were not very numerous at the time of my inspection. Although they had been found on some clothes hung up there, they were evidently not parasitic to man and did not sting or bite human beings. I assured him that they were not the ordinary pediculi and took specimens of them for identification. He told me that two churches in Killinger, the neighboring town, had been closed for two weeks and that his neighbors avoided him for fear of becoming infested with these insects. Dr. Skinner, of the Academy of Natural Sciences of Philadelphia, identified the insect as the Atropos divinatoria, or book louse, of the family of the Psocidae.

DIVISION OF MEDICAL INSPECTION.

INSPECTION OF SCHOOLS AND SCHOOL CHILDREN MADE DURING THE SCHOOL YEAR 1915-1916.

Inspection Practically Completed at the end of 1915.



SCHOOL MEDICAL INSPECTION.

Public interest in school medical inspection has seemed to increase, and with this increase in public interest in the work, school boards that have heretofore voted against medical inspection have refrained from passing such resolutions, so that for the school year of 1915-1916 but one hundred and seventy-five districts of the fourth class have voted against having medical inspecion performed. The growth of school medical inspection in districts of the fourth class is graphically shown by tabulating the number of districts, the number of schools and the number of pupils reached each year since the beginning of 1910.

TABULATION SHOWING GROWTH OF SCHOOL MEDICAL INSPECTION IN THE FOURTH CLASS DISTRICTS OF PENNSYLVANIA.

School Year.	Number of districts inspected.	Number of schools inspected.	Number of pupils inspected.
*1910,	83	657	22,111
†1911-1912,	757	3,572	145,499
†1912-1913,	1,469	7,375	305,372
†1913-1914,	1,831	8,969	377,099
†1914-1915,	2,159	11,036	469,199
†1915-1916,	2,201	18,368	485,337

*Done experimentally by order of the Department of Health.
†Inspection performed under the School Code in districts not exercising their option to vote against it.

The following fourth class school districts (175) exercised their option under section 1501 of the School Code not to have medical inspection of schools. Twenty-two hundred one districts took no such action and in all of the districts inspection was performed.

ADAMS COUNTY. *Townships:* Germany, Latimore, Menallen.

ALLEGHENY COUNTY. *Boroughs:* Crafton, Liberty, Wall, Whitaker. *Townships:* Franklin, McCandless, Moon, Mt. Lebanon, Pine.

ARMSTRONG COUNTY. *Boroughs:* Applewold, Atwood. *Townships:* Burrell, North Buffalo.

BEAVER COUNTY. *Borough:* Aliquippa.. *Townships:* South Beaver, Independence.

BEDFORD COUNTY. *Borough:* Rainsburg. *Township:* Lincoln.

BERKS COUNTY. *Townships:* Colebrookdale, Heidelberg, Jefferson, North Heidelberg.

BLAIR COUNTY. *Townships:* Allegheny, Catherine, Snyder, Taylor, Woodbury.

BRADFORD COUNTY. *Townships:* Athens, Overton.

BUCKS COUNTY. *Township:* Hilltown.

BUTLER COUNTY. *Boroughs:* Bruin, Harrisville. *Townships:* Adams, Clay, Franklin, Venango.

CAMBRIA COUNTY. *Boroughs:* Daisytown, Ebensburg. *Township:* Chest.

CAMERON COUNTY. *Township:* Grove.

CARBON COUNTY. *Borough:* Weatherly. *Township:* Towamensing.

CENTRE COUNTY. *Townships:* Gregg, Miles, Potter.

CHESTER COUNTY. *Township:* South Coventry.

CLEARFIELD COUNTY. *Borough:* Troutville. *Townships:* Covington, Girard, Goshen, Morris.

CLINTON COUNTY. *Township:* Pine Creek.

COLUMBIA COUNTY. *Townships:* Cleveland, Jackson, Madison, Orange.

CRAWFORD COUNTY. *Township:* Rome.

CUMBERLAND COUNTY. *Townships:* South Middleton, North Middleton, Newton, Hampden.

DAUPHIN COUNTY. *Townships:* East Hanover, Londonderry.

DELAWARE COUNTY. *Townships:* Bethel, Darby.

ERIE COUNTY. *Borough:* Elgin. *Townships:* Conneaut, Middleboro.

FAYETTE COUNTY. *Borough:* Vanderbilt. *Townships:* Brownsville, Bullskin, Henry Clay, Jefferson, Nicholson, Saltlick.

FOREST COUNTY. *Township:* Tionesta.

FRANKLIN COUNTY. *Borough:* Mont Alto. *Townships:* Antrim, Greene.

FULTON COUNTY. *Townships:* Licking Creek, Belfast.

GREENE COUNTY. *Borough:* Carmichaels. *Township:* Centre.

HUNTINGDON COUNTY. *Townships:* Cromwell, Lincoln, Smithfield, Walker.

INDIANA COUNTY. *Borough:* Mechanicsburg. *Townships:* Centre, North Mahoning, Rayne.

JEFFERSON COUNTY. *Townships:* Beaver, Bell, Perry.

JUNIATA COUNTY. *Township:* Susquehanna.

LANCASTER COUNTY. *Borough:* Terre Hill. *Townships:* Caernarvon, Manheim, New Milltown, West Earl.

LAWRENCE COUNTY. Chewton, Ind.

LEBANON COUNTY. *Townships:* South Annville, West Cornwall.

LEHIGH COUNTY. *Borough:* South Allentown. *Townships:* Upper Macungie, Washington.

LUZERNE COUNTY. *Townships:* Black Creek, Hunlock.

LYCOMING COUNTY. *Township:* Woodward.

McKEAN COUNTY. *Borough:* Lewis Run.

MERCER COUNTY. *Townships:* Hempfield, Hickory, Mill Creek.

MIFFLIN COUNTY. *Townships:* Bratton, Decatur, Union.

MONTGOMERY COUNTY. *Borough:* Jenkintown. *Townships:* Douglas, Lower Pottsgrove, Montgomery, Upper Pottsgrove.

MONTOUR COUNTY. *Township:* Derry.

NORTHAMPTON COUNTY. *Townships:* Lower Mt. Bethel, Upper Mt. Bethel.

NORTHUMBERLAND COUNTY. *Townships:* Delaware, Jordan.

PERRY COUNTY. *Townships:* Jackson, North East Madison, Saville, South West Madison.

POTTER COUNTY. *Township:* Roulette.

SCHUYLKILL COUNTY. *Boroughs:* Mt. Carbon, New Ringgold, Port Carbon, Tremont. *Townships:* Pine Grove, Washington.

SNYDER COUNTY. *Township:* West Beaver.

SOMERSET COUNTY. *Townships:* Addison, Allegheny, Elk Lick, Lower Turkeyfoot, Shade, Summit.

SUSQUEHANNA COUNTY. *Townships:* Brooklyn, Franklin, New Milford.

WARREN COUNTY. *Townships:* Conewango, Elk, Sheffield.

WASHINGTON COUNTY. *Boroughs:* Finleyville, Houston, Centreville. *Townships:* Blaine, Chartiers, Cross Roads, Ind., Donegal, South Strabane, Union, West Bethlehem.

WAYNE COUNTY. *Township:* Lebanon.

WESTMORELAND COUNTY. *Boroughs:* Vandergrift, Vandergrift Heights. *Townships:* Fairfield, Franklin.

YORK COUNTY. *Borough:* Yorkana. *Townships:* Carroll, Dover, Monaghan, Penn, Springetsbury, York.

Beginning with 145,000 pupils in the first inspection under the Code, the work has grown until at the present time 485,000 pupils were inspected, and during the interval, counting the number of pupils inspected experimentally in 1910, 2,000,000 inspections of school children have been made in the fourth class districts alone. The few districts that continue to deny children the benefit of school inspection do so chiefly through failure on the part of the school board to appreciate the value of inspection.

Out of the total number of twenty-two hundred and one school districts acepting school inspection, it will be noted that the following counties have school boards in fourth class districts that mean to give all children the advantage of school inspection. Not a single fourth class district in the ten counties of Clarion, Elk, Lackawanna, Monroe, Pike, Sullivan, Tioga, Union, Venango and Wyoming voted against it for the year 1915-1916; and in each of the following fourteen counties but a single district placed itself on record as being unprogressive and backward: Bucks, Cameron, Chester, Clinton, Crawford, Forest, Juniata, Lawrence, Lycoming, McKean, Montour, Potter, Snyder, Wayne.

As in previous years, the Department sent its officers throughout the counties where districts voted against inspection to make a complete sanitary survey of these schools. Those schools located in second class townships were inspected by health officers, those in boroughs and first class townships being covered by county medical inspectors of the Department or school medical inspectors deputized by them. The advantage of the sanitary survey was in this way extended to all schools in the fourth class districts and the medical inspection covered a larger territory than has ever been covered before.

An interesting and graphic tabulation of the results of medical inspection appears in the following table covering from 1911 on.

	1911-12.	1912-13.	1913-14.	1914-15.	1915-16.
Total number inspected,	145,499	304,372	377,079	469,199	485,337
Percentage of defective pupils,	76.7	74.9	72.7	71.5	76.2
Percentage of pupils having defective vision,	29.0	27.0	24.2	17.9	18.7
Percentage of pupils having defective hearing,	3.4	2.9	3.3	3.3	2.1
Percentage of pupils having defective nasal breathing,	10.8	3.4	5.7	4.9	4.5
Percentage of pupils having enlarged cervical glands,	8.7	6.9	5.9	4.9	4.5
Percentage of pupils having enlarged tonsils,	35.1	28.5	28.0	26.2	24.9

The extended tabulations of the school statistics set forth in Tables I to VII give interesting facts and show, to a certain extent, the progress that is being made and the cooperation that is being secured. Perhaps the greatest need at the present time is to secure more active cooperation of parents and teachers in order that pupils found defective shall have their defects corrected in time to give them all the advantages that schools may offer. The time is not far off when some agency must be found to more certainly secure treatment for those who are poor and unable to afford it; and some plan must be evolved for persuading or compelling careless parents to secure treatment for the obviously remediable conditons found in children who are being held back both physically and mentally because of defects that might readily be overcome. To accomplish these ends the Department should have a considerable corps of nurses who might go into the various fourth class school districts and labor with these parents who do not appreciate the importance of having defects corrected. These nurse visitors might not alone secure correction of the things that need to be treated medically and from a dental standpoint, but they could at the same time carry out treatment ordered by physicians and give proper advice concerning the supply of food to those suffering from malnutrition of the various sorts. The time is not far off when some sort of "flying clinics" must be evolved in order that those in remote sections of the Commonwealth, far distant from hospitals and free clinics, may have their children given advantages comparable to those dwelling in cities where the services of free hospitals are always readily obtained.

The teacher is often put to considerable inconvenience because of irremediable defects reported. In eighteen instances pupils deaf in both ears were found in attendance in the public schools, five mutes and sixteen deaf mutes were found in active attendance; and one pupil blind in both eyes burdened the teacher.

The vast majority of the teachers of the Commonwealth are in full sympathy with medical inspection and cheerfully do the amount of clerical work asked of them in order that we may get correct information concerning the results that are being accomplished. The attention of students of this problem is especially called to the table showing the results of this work as observed by the teachers. The teacher's influence with the family is always to be taken advantage of in making parents see the importance of corrective measures. In at least some districts we have apparently secured all the assistance we can get from the teachers. Here the time is already ripe for cooperative work with nurses. The nurse and teacher together ought to secure treatment for practically all who need it.

The active cooperation of school directors and superintendents of schools has been secured in a large number of instances by having

the lecturer with the exhibit give practical talks before the teachers' institute on directors' day, and having him give lectures to the teachers as they are assembled in institute, taking up the various problems of school inspection, medical defects in school children, corrective measures that should be practiced—the proper seating of school children, lighting and ventilation of school rooms, etc.

Our letters sent to parents calling attention to defects found in their children were changed during the current year and little preachments were placed on the back of each letter that ought to carry valuable lessons into the homes of many of the school children. The form letter used in calling attention to general defects contains the following:

> "Defective vision may seriously impede the progress of pupils and and when associated with eye strain often produces marked irritability, prevents close application to study and may affect the general health of the pupils. Defective eyesight should be corrected without delay. The trouble is never outgrown but in most instances yields readily to treatment.
>
> "Nose and throat affections are commonly caused by adenoids and enlarged tonsils. These conditions are both overgrowths of spongy tissue, the former at the back of the nose, the latter at each side of the throat, and often require removal. Neglect to correct nasal obstruction is liable to result in nasal catarrh or impairment of hearing, while the neglect of large tonsils often results in recurring attacks of sore throat or serious systemic infection. In cases of great enlargement of adenoids and tonsils the natural contour of the face, particularly about the mouth and nose, is changed to a marked degree, so that in addition to impaired health, the facial expression may be greatly altered."

The letters sent to parents whose children had decayed teeth and those to parents whose children had nothing more wrong than dirty teeth contain this preachment:

> "The temporary or milk teeth shoudl always be kept clean in order to preserve them from decay. Neglect of these temporary teeth, particularly if they are lost from decay, is almost sure to result in early decay of the permanent teeth. Decayed teeth are frequent sources of infectious diseases, are often direct sources of indigestion, while the permanent loss of teeth often prevents proper development of the jaws, induces habitual mouth breathing, which is a fruitful cause of nose and throat troubles, and interferes with the proper formation of nature's lines about the mouth. Permanent teeth, when properly cared for, should last throughout life. Children should be taught to cleanse their teeth after each meal."

Those to parents whose children are believed to be probably tubercular contain an interesting lesson on tuberculosis:

> "*Tuberculosis is Infectious.* It is usually contracted by the introduction of tubercle bacilli coming directly or indirectly from one suffering with tuberculosis. The germ causing this disease is usually found in the sputum of sufferers.

"*Tuberculosis is Preventable.* To avoid contracting the disease cleanliness is absolutely essential. This includes avoiding contact with the bacilli as found in dirty homes, in the dirt of the streets or public places. Tubercle bacilli are to be found on the persons of those suffering with the disease, on the eating utensils, on the furniture and bedding used by them, and on the walls of dirty homes occupied by those having consumption.

"*Prevent* the disease by maintaining a high resistance to infection, avoid excesses of all kinds, avoid the use of alcohol, as it will interfere with functions and processes of digestion and harden the walls of the blood vessels, conserve the body's strength, and be careful in the selection of suitable food.

"Another important factor in maintaining a high resistance is *living in the open air* as much as time will permit, both *night and day.*

"*Tuberculosis is curable* in most instances. When the proper medical advice is secured and obeyed in the early stages of the disease a cure usually follows."

In addition to the use of this educational type of letter, all school inspectors were required to give a talk on oral hygiene, spending from ten to fifteen minutes in each school before beginning the regular work. Form 45 on "The Care of the Teeth" was printed in sufficient number to have each inspector hand the teacher one at the conclusion of his talk.

"Form 46.

"COMMONWEALTH OF PENNSYLVANIA.

"DEPARTMENT OF HEALTH.

"Some Reasons for Teaching Children to

"CLEANSE THE TEETH.

"About forty per cent. of all children attending fourth class district public schools show lack of proper care of the teeth. Ten of these children out of each one hundred have dirty teeth; forty out of each one hundred have decayed teeth in addition to dirty teeth; and a great many children also have a diseased condition of the gums and have sinuses about the stumps and roots of rotting teeth discharging pus directly into their mouths as they crunch food.

"Parents who keep their children's skins clean often completely neglect to keep their mouths clean. The mouth is often the portal of entry for disease. If parents could be made to see that much of the backwardness in school, much of the irritability, nervousness, faulty nutrition, digestive disturbance and much of the low resistance to disease is due to unhygienic conditions of the mouth particularly of the teeth, and further if parents could be made to appreciate the fact that the child's future health, usefulness and happiness depend to a great degree upon the care of the teeth, then each school child would be taught to use a clean tooth brush and mothers would attend to cleansing the teeth of little children long before they reach the school age.

"Dirty teeth, with their ugly discolorations, are mostly diseased. These discolorations usually mean an accumulation of germ life with germ poisons entering the system. This means destruction of the finely

polished enamel of the teeth and sooner or later decay of the tooth substance itself, irritation of the nerves of the teeth; the process often going on to the formation of sinuses about the roots of the teeth with pus discharging into the mouth each time the jaws are closed upon food. The resulting wear and tear from such neglect is often appalling. Many of the causes of ill health in school children are revealed by carefully examining the mouth and teeth.

"Nearly all of this suffering and inconvenience is preventable and can be avoided if school authorities and parents teach children to cleanse their teeth with a suitable brush and simple tooth powder after meals, or at least twice each day. Many of the unfortunate dental affections seen in growing hildren may be completely checked by having a dentist remove the decayed material and insert a protective filling. Extraction should be practised as the very last resort.

"Even the first set of teeth should be protected in this way and if decay begins the teeth should be treated carefully by a dentist.

"Man is provided with two sets of teeth, the first teeth or the first set, called the deciduous or milk teeth, erupting in infancy, appearing in the front of the upper or lower jaw about the six month of age, and when complete consists of ten in the upper and ten in the lower jaw; the second or permanent set of teeth are thirty-two in number, the first of the permanent set, the first molars, usually appear about the fifth or sixth year of life and closely follow shedding of the deciduous or milk teeth.

"Too often the first set of teeth are removed without due regard to the purpose they serve in developing the jaws of the growing child and in perfecting the normal facial contour. Too little regard is paid to the effects of decay of the first set of teeth. The public are not being sufficiently impressed with the fact that the child having decay of the first set of teeth is thus carefully preparing the soil for decay of the permanent or second set, and almost before the permanent teeth are fully erupted the highly polished enamel surface begins taking on dull lusttreless appearance, the onset of what later becomes a more active form of decay.

"Almost as important as brushing the teeth is the proper care and proper cleansing of the tooth brush. The pernicious habit of placing several tooth brushes in a cup affords ample opportunity for transmitting germs of disease from mouth to mouth. Each brush should be thoroughly cleansed immediately after using, should be rinsed with very hot water and hung where it will not touch other brushes, preferably in the light, to dry before being used again.

"SAMUEL G. DIXON,
"Commissioner of Health."

"September, 1915.

TABLE 1.

STATISTICS OF SCHOOL MEDICAL INSPECTION.

FOURTH CLASS DISTRICTS.

1915-1916.

(Inspection practically completed by end of 1915).

Number of medical inspectors employed,			998
Number of schools inspected,		18,368	
*Number of pupils inspected,		485,337	
Number apparently normal,	115,546		23.9%
Number found defective,	369,791		76.2%
Number having single defects,	206,093		
Number having more than one defect,	163,698		
Total number of defects,		600,233	
Defective pupils, treatment advised by letter,		347,333	71.6%

*Per cent. of defectives throughout this report based on "Number of Pupils Inspected."

TABULATION OF DEFECTS.

VISION.			
Pupils having defective vision,		91,012	18.7%
Right eye only,	15,160		
Left eye only,	15,776		
Both eyes,	60,076		
Pupils having other eye affections,		4,383	0.9%
Corneal scars,	547		
Blepharitis,	1,353		
Conjunctivitis simplex,	1,068		
Conjunctivitis follicularis,	14		
Iritis,	0		
Trachoma,	129		
Strabismus (special tests not made),	1,092		
Astigmatism,	51		
Blindness from injury (one eye),	129		
HEARING.			
Pupils having defective hearing,		10,350	2.1%
BREATHING.			
Pupils having defective breathing,		21,704	4.5%
Slight impairment,	14,210		
Serious impairment,	3,247		
Mouth breathing,	4,247		
Pupils having adenoids (suspected),		7,627	1.6%
Pupils having goitre,		1,297	0.3%
TEETH.			
Pupils having defective teeth,		300,738	62.0%
Unclean teeth,	49,171		10.1%
Decayed teeth,	251,567		51.8%
Gums diseased,		2,350	
TONSILS.			
Pupils having enlarged tonsils,		120,958	24.9%
Slightly enlarged,	77,133		
Greatly enlarged,	42,617		
Acutely inflamed tonsils,	1,208		
CERVICAL GLANDS.			
Pupils having enlarged cervical glands,		22,188	4.5%
TUBERCULOSIS.			
Pupils reported as having tuberculosis,		851	0.2%
Tuberculosis of lungs,	330		
Tuberculosis of glands,	392		
Tuberculosis of bones,	61		
Tuberculosis of joints,	68		

NERVOUS DISEASES.			
Pupils having nervous diseases of grave import,		612	0.1%
Chorea,	530		
Epilepsy,	82		
Pupils mentally deficient,		516	0.1%
SKIN DISEASES.			
Pupils having skin affections,		6,543	1.3%
Scabies,	51		
Impetigo contagiosa,	407		
Favus,	4		
Ring worm,	57		
Head lice,	4,947		
Body lice,	1		
Lupus,	8		
Eczema,	516		
Acne,	427		
Other skin affections,	125		
DEFORMITIES.			
Pupils having deformities,		1,798	0.4%
Hunch back,	25		
Club foot,	89		
Curved spine,	164		
Ankylosed joint,	23		
Hare lip,	43		
Cleft palate,	147		
Other deformities,	1,307		
MALNUTRITION.			
Pupils with sub-normal nutrition,		6,791	1.4%
Slight,	5,736		
Marked,	1,055		
QUARANTINABLE DISEASES.			
Pupils in school that should have been in quarantine,		31	
Chicken pox,	25		
Whooping cough,	3		
Diphtheria,	1		
Scarlet fever,	2		
MISCELLANEOUS AFFECTIONS.			
Pupils having miscellaneous defects,		484	
Defective speech (including mutes),	286		
Defective heart,	129		
Other defects,	69		

19—16—1918

TABLE II.
PHYSICAL INSPECTION OF SCHOOL CHILDREN 1915-1916.
FOURTH CLASS DISTRICTS.

Counties.	Total.	Normal.	Defective.	Normal Male.	Defective Male.	Normal Female.	Defective Female.	Normal Native.	Defective Native.	Normal Foreign.	Defective Foreign.
Total,	485,337	115,546	369,791	53,952	188,133	61,594	181,658	110,945	351,828	4,661	17,963
Adams,	4,258	1,011	3,247	441	1,535	570	1,712	1,011	3,246		1
Allegheny,	26,171	5,404	20,767	2,628	10,795	2,776	9,972	5,056	19,597	348	1,170
Armstrong,	11,182	2,922	8,260	1,355	4,116	1,567	4,144	2,578	7,342	348	918
Beaver,	8,703	2,534	6,169	1,176	3,129	1,358	3,040	2,427	5,778	107	391
Bedford,	6,882	1,365	5,517	653	2,627	712	2,890	1,333	5,446	32	71
Berks,	13,723	2,939	10,784	1,345	5,528	1,594	5,256	2,928	10,712	11	72
Blair,	4,942	1,171	3,771	520	1,904	651	1,867	1,151	3,729	20	42
Bradford,	8,040	2,091	5,949	903	3,040	1,188	2,909	2,088	5,928	3	21
Bucks,	9,575	2,622	6,953	1,234	3,651	1,388	3,302	2,593	6,817	29	136
Butler,	7,222	1,849	5,373	826	2,744	1,023	2,629	1,797	5,195	52	178
Cambria,	19,615	4,459	15,156	2,170	7,704	2,289	7,452	4,128	13,586	327	1,570
Cameron,	1,268	225	1,043	100	493	125	550	216	990	9	44
Carbon,	6,402	1,550	4,852	749	2,500	801	2,352	1,458	4,627	92	225
Centre,	7,234	1,462	5,772	652	2,865	830	2,906	1,429	5,613	33	159
Chester,	11,841	3,638	8,203	1,763	4,133	1,872	4,070	3,554	7,974	84	229
Clarion,	6,824	1,469	5,355	629	2,702	840	2,653	1,448	5,265	21	60
Clearfield,	11,749	2,506	9,243	1,088	4,838	1,418	4,405	2,283	8,493	223	750
Clinton,	3,816	1,353	2,463	637	1,260	716	1,194	1,342	2,450	11	13
Columbia,	4,645	1,073	3,572	457	1,818	616	1,754	1,069	3,522	4	50
Crawford,	6,947	1,884	5,063	854	2,598	1,030	2,465	1,874	5,045	10	18
Cumberland,	6,371	2,428	3,943	1,109	1,972	1,319	1,971	2,428	3,932	4	11
Dauphin,	6,935	1,898	5,037	853	2,631	1,045	2,406	1,883	5,003	15	34
Delaware,	9,055	2,424	6,631	1,127	3,376	1,297	3,255	2,342	6,405	82	226
Elk,	4,232	934	3,298	447	1,694	487	1,604	894	3,124	40	174
Erie,	7,587	1,379	6,208	636	3,164	743	3,044	1,366	6,116	13	92
Fayette,	9,268	1,557	7,711	759	3,949	798	3,762	1,398	6,813	159	898
Forest,	1,806	221	1,585	93	780	128	805	148	1,582	73	53
Franklin,	5,709	1,072	4,637	446	2,323	626	2,314	1,071	4,635	1	2
Fulton,	1,381	139	1,242	58	567	81	675	139	1,242		
Greene,	5,104	1,012	4,092	477	2,117	535	1,975	997	4,019	15	73

Huntingdon,	5,147	1,198	3,949	560	1,992	628	1,957	1,160	3,807	38	142
Indiana,	9,099	2,384	6,715	1,148	3,372	1,236	3,343	2,144	5,840	240	875
Jefferson,	9,583	2,250	7,283	1,115	3,691	1,135	3,592	2,132	6,767	118	576
Juniata,	2,464	655	1,799	297	868	368	931	665	1,759		
Lackawanna,	6,200	1,055	5,145	445	2,684	610	2,461	951	4,225	104	920
Lancaster,	17,284	5,670	11,614	2,708	5,855	2,962	5,759	5,631	11,601	9	13
Lawrence,	4,769	897	3,863	448	1,928	449	1,935	729	3,213	168	650
Lebanon,	6,697	1,671	5,026	820	2,477	851	2,549	1,648	4,991	63	95
Lehigh,	6,562	1,235	5,327	563	2,721	672	2,606	1,231	5,243	4	84
Luzerne,	14,021	2,430	11,591	1,126	6,098	1,304	5,583	2,280	10,747	150	844
Lycoming,	7,252	1,984	5,268	829	2,603	1,155	2,695	1,982	5,251	2	17
McKean,	5,168	1,539	3,629	734	1,867	805	1,762	1,530	3,613	9	16
Mercer,	7,575	1,254	6,321	528	3,241	726	3,080	1,226	6,065	28	255
Mifflin,	2,141	641	1,500	337	750	304	750	625	1,481	6	19
Monroe,	4,046	1,493	2,553	678	1,336	815	1,217	1,489	2,549	13	4
Montgomery,	12,193	2,491	9,702	1,168	5,286	1,323	4,416	2,460	9,384	91	318
Montour,	749	150	599	48	309	102	290	149	597	1	2
Northampton,	9,260	2,092	7,168	1,049	3,704	1,043	3,464	1,954	6,892	138	336
Northumberland,	4,997	1,274	3,723	611	1,864	653	1,859	1,250	3,647	14	76
Perry,	3,627	1,154	2,473	529	1,186	625	1,287	1,150	2,465	4	8
Pike,	1,120	303	817	152	410	151	407	303	815		2
Potter,	4,471	1,438	3,033	636	1,484	772	1,549	1,369	2,987	69	96
Schuylkill,	15,792	3,062	12,730	1,468	6,482	1,594	6,248	3,006	12,009	56	651
Snyder,	2,510	512	1,998	236	970	276	1,028	512	1,908		
Somerset,	10,164	2,374	7,790	1,088	3,972	1,286	3,818	2,171	7,034	203	956
Sullivan,	2,213	471	1,742	222	804	249	848	466	1,726	5	16
Susquehanna,	4,845	1,094	3,751	529	1,901	565	1,850	1,078	3,706	16	45
Tioga,	7,390	1,225	6,165	551	3,135	674	3,030	1,185	5,921	40	244
Union,	2,528	770	1,758	335	886	405	872	765	1,748	4	10
Venango,	5,280	1,394	3,886	618	1,955	776	1,931	1,391	3,881	3	5
Warren,	3,521	1,164	2,357	547	1,209	617	1,148	1,157	2,344	7	13
Washington,	15,635	4,226	11,439	2,136	5,927	2,090	5,512	3,681	9,647	545	1,802
Wayne,	4,977	1,124	3,853	497	1,881	627	1,972	1,113	3,828	11	25
Westmoreland,	12,576	3,324	9,252	1,597	4,719	1,727	4,533	3,060	7,998	264	1,324
Wyoming,	2,649	661	1,988	300	981	361	1,097	659	1,978	2	10
York,	12,374	2,286	10,088	1,061	5,022	1,225	5,066	2,276	10,065	1	22

TABLE III.

SINGLE DEFECTS AND ASSOCIATED DEFECTS IN 369,791 DEFECTIVE PUPILS 1915-1916.

(Full Reports on Form 51 forwarded to the Department, Tabulation Made by Department Officers.)

Defects.	Defective Pupils.			Associated Defects (single defects also are included in last entry of each column).																
	Total.*	Single defects.	More than one defect.*	Vision.	Hearing.	Breathing.	Teeth.	Tonsils.	Glands.	Tuberculosis.	Nerves.	Skin diseases.	Head lice.	Deformities.	Malnutrition.	Quarantinable diseases.	Eye diseases.	Adenoids.	Goitre.	Miscellaneous defects.
Vision,	91,012	22,648	68,364	91,012	3,216	5,206	58,564	24,451	4,858	233	336	307	1,000	326	1,736	8	1,952	1,722	301	104
Hearing,	7,134	1,489	5,645	-------	7,134	952	4,668	2,503	663	33	33	5	87	51	232	1	65	393	36	32
Breathing,	15,546	1,145	14,401	-------	-------	15,546	12,016	9,331	2,496	94	93	71	161	128	799	2	129	2,919	75	48
Teeth,	226,976	154,469	72,501	-------	-------	-------	227,840	60,360	11,321	338	434	779	2,651	832	3,080	14	1,142	1,888	492	261
Tonsils,	24,313	21,857	2,456	-------	-------	-------	-------	24,313	1,253	41	47	81	194	79	268	------	130	525	70	9
Glands,	1,594	1,391	203	-------	-------	-------	-------	-------	1,594	12	7	7	26	6	95	------	23	13	33	1
Tuberculosis,	98	67	31	-------	-------	-------	-------	-------	-------	100	------	0	2	9	16	------	2	------	3	1
Nerves,	178	157	21	-------	-------	-------	-------	-------	-------	------	178	1	------	3	11	------	3	1	2	------
Skin diseases,	345	326	19	-------	-------	-------	-------	-------	-------	------	------	345	10	------	6	------	3	------	1	------
Head lice,	816	798	18	-------	-------	-------	-------	-------	-------	------	------	------	816	4	9	------	2	------	3	------
Deformities,	362	339	23	-------	-------	-------	-------	-------	-------	------	------	------	------	362	26	------	1	1	1	------
Nutrition,	519	508	11	-------	-------	-------	-------	-------	-------	------	------	------	------	------	519	------	1	4	4	2
Quarantinable diseases,	6	6	-------	-------	-------	-------	-------	-------	-------	------	------	------	------	------	------	6	------	------	------	------
Eye diseases,	381	376	5	-------	-------	-------	-------	-------	-------	------	------	------	------	------	------	------	381	3	2	2
Adenoids,	159	159	-------	-------	-------	-------	-------	-------	-------	------	------	------	------	------	------	------	------	159	------	------
Goitre,	274	274	-------	-------	-------	-------	-------	-------	-------	------	------	------	------	------	------	------	------	------	274	------
Miscellaneous defects,	84	84	-------	-------	-------	-------	-------	-------	-------	------	------	------	------	------	------	------	------	------	------	84
Pupils defective,	369,791	265,093	163,698	-------	-------	-------	-------	-------	-------	------	------	------	------	------	------	------	------	------	------	------
Total defects,	-------	-------	-------	91,012	10,350	21,704	303,088	120,958	22,188	851	1,128	1,096	4,947	1,800	6,791	31	3,836	7,027	1,297	484

*In these two columns the entries for each defect do not include pupils having this defect associated with others *above* it in the table; i. e. defective pupils (and associated defects) are entered only opposite the defect first appearing in the column of defects.

TABLE IV.

VISION DEFECTS IN ASSOCIATION WITH OTHER DEFECTS. FOURTH CLASS SCHOOL DISTRICTS 1915-1916.

Ages.	Right eye with other defects including left eye.	Left eye with other defects including right eye.	Both right eye and left eye with other defects.	Right eye with others —left eye.	Left eye with others— right eye.
Total all ages,	57,458	57,773	47,020	10,438	10,753
4,	16	21	16		5
5,	495	497	420	75	77
6,	4,656	4,696	3,905	751	791
7,	6,910	6,973	5,786	1,124	1,187
8,	7,822	7,933	6,533	1,289	1,400
9,	7,637	7,739	6,307	1,330	1,432
10,	7,428	7,436	6,051	1,377	1,385
11,	5,524	5,580	4,468	1,056	1,112
12,	5,343	5,331	4,289	1,054	1,042
13,	4,480	4,479	3,613	867	866
14,	3,105	3,116	2,456	649	660
15,	2,196	2,079	1,701	495	378
16,	1,007	1,025	810	197	215
17,	497	523	393	104	130
18,	258	255	202	56	53
19,	70	75	59	11	16
20,	9	9	7	2	2
21,	3	4	2	1	2
22,	2	2	2		

TABLE V.

VISION DEFECTS ARRANGED BY AGE OF PUPILS AND IN ASSOCIATION WITH OTHER DEFECTS 1915-1916.

Ages.	Total vision defects.	Vision defects alone.	Vision defects with other defects.
Total all ages,	91,102	22,648	68,364
4,	21	0	21
5,	748	175	573
6,	6,853	1,389	5,464
7,	9,710	1,603	8,107
8,	11,026	1,787	9,239
9,	10,914	1,830	9,084
10,	10,999	2,170	8,829
11,	9,028	2,376	6,652
12,	9,061	2,657	6,404
13,	7,988	2,575	5,363
14,	5,895	2,119	3,776
15,	4,294	1,714	2,580
16,	2,413	1,185	1,228
17,	1,273	645	628
18,	617	305	312
19,	179	93	86
20,	28	17	11
21,	9	4	5
22,	3	1	2
23,	3	3	0

TABLE VI.
VISION DEFECTS ALONE, ARRANGED BY AGE PERIODS.
PUPILS OF FOURTH CLASS DISTRICTS 1915-1916.

Ages.	Right eye with other vision defects.	Left eye with other vision defects.	Both eyes affected (alone).	Right eye (alone).	Left eye (alone).
Total all ages,	18,856	18,989	15,192	3,213	3,606
5,	156	154	137	20	17
6,	1,161	1,178	953	167	220
7,	1,369	1,414	1,176	168	229
8,	1,515	1,526	1,252	225	265
9,	1,523	1,563	1,260	253	298
10,	1,833	1,838	1,494	285	329
11,	1,943	1,944	1,527	358	401
12,	2,229	2,229	1,792	380	418
13,	2,129	2,136	1,678	378	441
14,	1,751	1,754	1,376	332	333
15,	1,403	1,411	1,097	284	308
16,	975	984	773	189	205
17,	526	524	407	107	117
18,	239	250	189	49	61
19,	81	81	68	12	12
20,	13	.....	8	4	5
21,	4	.....	2	1	.....
22,	1	.....	.....	.....	.....
23,	2	.....	2	1	1

TABLE VII.
TEACHERS' RETURN REPORTS.
FOURTH CLASS SCHOOL DISTRICTS 1915-1916.

Total number of schools having medical inspection,	18,368	
Total number of pupils inspected,	485,337	
Total number of pupils, treatment advised by letter,	347,333	
Total teachers' "Return Reports" received,	15,411	
Per cent. of teachers making Return Reports,		83.9%
Pupils included in teachers' "Returns,"	296,074	
Pupils reported treated,	66,550	22.5%
Pupils reported not treated,	207,034	69.9%
Pupils reported with no record of treatment,	23,185	7.8%
Pupils reported improved by treatment,	63,797	
Per cent. of treated pupils improved,		95.8%
Pupils reported unimproved by treatment,	1,015	
Per cent. of treated pupils unimproved,		1.5%
Pupils, results of treatment not stated by teacher,	1,738	
Per cent. of treated pupils, results not stated,		2.6%

DEFECTS TREATED.

	*Total.	Improved.	Unimproved.
Vision,	11,850	7,211	590
Hearing,	1,479	801	126
Breathing,	1,406	782	76
Teeth,	57,950	57,190	760
Tonsils,	4,989	2,768	242
Cervical glands,	1,972	1,077	92
Tuberculosis—lungs,	71	44	5
Tuberculosis—glands,	68	32	10
Tuberculosis—bones,	7	3	2
Tuberculosis—joints,	11	5	2
Nervous diseases,	147	81	24
Skin diseases including scalp,	2,873	2,425	55
Deformities,	19	13	3
Nutrition,	187	103	10
Miscellaneous defects,	42	33	6

*In some cases results of treatment were not stated by teachers reporting, hence total of "Improved" and "Unimproved" does not equal "Treated."

SANITARY INSPECTION OF SCHOOL BUILDINGS AND GROUNDS IN FOURTH CLASS SCHOOL DISTRICTS 1915-1916.

The last tabulated report of school sanitation throughout the fourth class districts of the Commonwealth indicates that but one hundred and eighty-three, or one and five-tenths per cent., of the buildings are sanitary in all particulars. This percentage seems remarkably small, but it must be borne in mind that quite a number of buildings score sanitary in all but one point. In a large number of cases buildings costing thousands of dollars, provided with good equipment and apparently good systems of ventilation, were classed as insanitary in some particular because they failed to have provisions for supplying moisture to the heated air or failed to use such provision.

Very little attention is given to this vital point by school authorities. In sixty per cent. of the school buildings inspected, as is shown by the report, children are continually compelled to inhale dry, superheated air—a very fruitful source of throat and nasal ailments. It is entirely overlooked that a school room with the air properly humidified will be as comfortable at 65 F. as with superdried air at a temperature of 68 or 70, and the effects of humidifying the air will be invigorating.

In sixty-nine per cent. of the buildings, windows and doors must be depended upon for ventilation, and in about two-thirds of these (forty-five per cent. of the total number of buildings) no window ventilating shields are provided, the consequence being that very little ventilation is attempted, because opening the windows from below at once subjects nearby pupils to direct drafts.

In recent years a great deal of stress has been laid upon the value of the fresh air school, and rightly so; but school authorities in general seem ready to admit the value of the fresh air school for pupils threatened with tuberculosis, but do not appear to realize that it is even of more importance to see that the thousands of children now apparently vigorous shall not be compelled to spend their school days inhaling a poisoned atmosphere and then be made subjects for the fresh air school.

The amount of light or glass surface is below the legal requirements in forty-two per cent. of the school rooms inspected, and in practically every one of these rooms, already deficient in glass surface, one-third of the light available is shut out by the use of dark colored shades, usually green, which instead of being entirely rolled up during the hours that the sun does not strike the window, remain continually drawn over at least one-third of the window.

Light weight buff colored shades with rollers fastened at the bottom of the window and drawn up by pulley and cord, only when actually required to exclude direct sunlight, are needed in fifty-four per cent. of the fourth class district school rooms. The discarding of dark green shades fastened at the top of the window and the installing of shades as above described will add from thirty to fifty per cent. to the lighting efficiency of such school rooms. Shades drawing from the bottom, even when half way or two-thirds drawn, will still admit light at the point where it is best available for distribution throughout the room—that is at the top of the window rather than at the bottom where its availability is reduced approximately fifty per cent.

A glance at the comparative report presented herewith, showing the gains made in securing better school conditions, in the period of one year, show very healthy progress, and cannot help but convince, even the most skeptical, that these sanitary inspections have produced results worth while; but the field for improvement is still exceedingly large.

COMPARATIVE REPORT OF INSANITARY SCHOOL CONDITIONS.
FOURTH CLASS SCHOOL DISTRICTS.

1914-15 and 1915-16 Terms.

	1914-15	1915-16
Light admitted from the front of seated pupils,	1,088	431
Insanitary sweeping practiced,	10,194	7,369
Dry dusting practiced,	6,387	4,787
Ordinary stoves in use, unjacketed,	4,842	4,490
No thermometers in use,	4,677	3,774
No moisture supplied to heated air,	7,996	7,587
Windows the only means of ventilation,	9,315	8,691
Window ventilation without boards or shields,	7,033	5,680
Windows not open during session,	903	515
Open water container in use,	3,140	1,222
Common drinking cup in use,	4,634	3,127
Privy entrances not legally screened,	5,803	5,004
Privy vaults not properly disinfected,	6,152	4,777

A brief idea may be obtained concerning the volume of work done in the sanitary inspection of school rooms and buildings in the fourth class districts. The following table shows the total number of such inspections; the number of single, the number of multiple room buildings; the number sanitary in practically all particulars; those insanitary; those that have satisfactory water provision and those that have some insanitary method, either in sources of supply or method of handling; the number having sanitary privies and those found having privies in insanitary condition; all grouped by counties and tabulated separately.

SCHOOL SANITARY INSPECTIONS FOURTH CLASS DISTRICTS 1915-1916.

County.	Total school rooms.	School Buildings.					Water Provisions.		Toilets.	
		Single room.	Multiple room.	Total.	Sanitary.	Insanitary.	Sanitary.	Insanitary.	Sanitary.	Insanitary.
Total,	20,277	10,038	2,520	12,558	183	12,375	2,489	10,069	2,015	10,543
Adams,	220	156	16	172	1	171	49	123	11	161
Allegheny,	915	188	120	308	12	296	141	167	109	199
Armstrong,	402	226	44	270	0	270	44	226	44	226
Beaver,	349	125	47	172	4	168	51	121	34	138
Bedford,	336	227	31	258	2	256	32	226	21	237
Berks,	572	335	61	396	6	390	6	390	156	240
Blair,	213	121	27	148	2	146	18	130	27	121
Bradford,	433	239	52	291	4	287	29	262	21	270
Bucks,	400	205	55	260	31	229	111	149	47	213
Butler,	317	221	28	249	1	248	18	231	49	209
Cambria,	607	182	102	284	2	282	64	220	30	254
Cameron,	60	29	6	35	1	34	4	31	4	31
Carbon,	235	58	32	90	5	85	21	69	24	66
Centre,	315	164	39	203	1	202	25	178	20	183
Chester,	448	218	69	287	3	284	98	189	55	232
Clarion,	284	174	31	205	0	205	14	191	31	174
Clearfield,	431	217	64	281	6	275	41	240	33	248
Clinton,	161	87	21	108	0	108	27	81	23	85
Columbia,	230	129	30	159	1	158	45	114	21	138
Crawford,	393	271	33	304	0	304	37	267	23	281
Cumberland,	287	164	26	190	0	190	36	154	50	140
Dauphin,	263	123	26	149	6	143	27	122	25	124
Delaware,	324	28	58	86	3	83	46	46	40	46
Elk,	109	52	36	88	1	87	19	69	25	63
Erie,	375	207	39	246	1	245	55	191	26	220
Fayette,	389	154	60	214	8	206	49	165	14	200
Forest,	92	46	12	58	2	56	7	51	7	51
Franklin,	277	178	34	212	0	212	51	161	1	211
Fulton,	83	74	3	77	0	77	0	77	2	75
Greene,	267	182	26	208	1	207	12	195	9	199
Huntingdon,	241	173	19	192	1	191	15	177	20	172
Indiana,	382	215	44	259	2	257	17	242	30	229
Jefferson,	340	178	38	216	0	216	68	148	35	181
Juniata,	117	85	9	94	3	91	2	92	9	85
Lackawanna,	214	69	33	102	1	101	22	80	16	86
Lancaster,	633	380	77	457	13	444	133	324	57	400
Lawrence,	192	105	31	136	0	136	11	125	25	111
Lebanon,	265	124	34	158	1	157	16	142	37	121
Lehigh,	283	137	40	177	1	176	70	107	52	125
Luzerne,	465	133	72	205	2	203	45	160	74	131
Lycoming,	299	188	26	214	0	214	39	175	50	164
McKean,	233	100	34	134	3	131	26	108	42	92
Mercer,	348	208	33	236	1	235	63	173	21	215
Mifflin,	105	54	12	66	0	66	1	65	5	61
Monroe,	177	90	19	109	2	107	25	84	4	105
Montgomery,	483	132	83	215	7	208	95	120	42	173
Montour,	49	47	1	48	0	48	1	47	1	47
Northampton,	343	156	48	204	4	200	54	150	55	149
Northumberland,	213	130	19	149	0	149	15	134	25	124
Perry,	182	130	13	143	1	142	15	128	12	131
Pike,	68	52	2	54	0	54	9	45	3	51
Potter,	211	117	22	139	1	138	22	117	9	130
Schuylkill,	576	177	106	283	8	275	86	197	95	188
Snyder,	127	84	15	99	3	96	12	87	18	81
Somerset,	454	251	55	306	0	306	56	250	19	287
Sullivan,	107	62	13	75	0	75	11	64	7	68
Susquehanna,	271	165	28	193	0	193	32	161	13	180
Tioga,	325	152	35	187	0	187	24	163	22	165
Union,	102	67	9	76	1	75	17	59	14	62
Venango,	235	147	29	176	0	176	20	156	34	142
Warren,	253	125	29	154	2	152	28	126	30	124
Washington,	649	248	97	345	10	335	98	247	41	304
Wayne,	299	212	24	236	0	236	22	214	11	225
Westmoreland,	465	140	64	204	1	203	51	153	58	146
Wyoming,	132	74	14	88	0	88	13	75	13	75
York,	559	356	65	421	11	410	84	337	34	387

For the year 1915-16 we have continued summarizing the work of sanitary inspection of schools made by the school medical inspectors and sanitary inspection of such schools as declined medical inspection, the work being done by Department health officers and county medical officers.

STATISTICS OF SANITARY INSPECTION OF SCHOOL BUILDINGS AND GROUNDS IN FOURTH CLASS SCHOOL DISTRICTS 1915-1916.

		Total.	Per Cent.
Total fourth class school districts in State,		2,377	
Districts inspected by State inspectors,		2,376	
By school medical inspectors,	2,201		
By health officers or C. M. I.,	175		
SCHOOL OR CLASS ROOMS.			
Total school or class rooms inspected,		20,277	
Rooms having:			
Legal requirements of floor space per pupil,		17,813	
Floor surface per pupil below legal requirement,		2,464	12.1
Legal requirement of air space per pupil,		16,895	
Air space per pupil below legal requirement,		3,382	16.7
Legal requirement of light or glass surface,		11,732	
Light or glass surface below legal requirement,		8,545	42.1
Light admitted from the side or rear and sides,		19,846	
Light admitted from the front of seated pupils,		431	2.1
Light colored shades in use,		9,297	
No shades, or dark colored shades provided,		10,980	54.1
Rooms found neat and clean,		19,883	
Rooms found in unclean condition,		394	1.9
Floors oiled and sweeping compound used,		4,053	
Floors oiled only,		4,102	
Sweeping compound used only,		4,713	
Vacuum cleaner used,		40	
Insanitary sweeping practiced,		7,369	36.3
Dry dusting abolished,		15,490	
Dry dusting practiced,		4,787	23.6
Adjustable seats and desks in use,		5,396	
Ordinary desks with foot stools provided,		1,309	
Ordinary desks with no foot stools provided,		13,550	66.8
Pencils and pens not collected,		17,642	
Pencils or pens collected, properly redistributed,		2,349	
Pencils or pens collected, improperly redistributed,		286	1.4
SCHOOL BUILDINGS.			
Total school buildings inspected,		12,558	
Number of single room buildings,	10,038		
Number of multiple room buildings,	2,520		
Buildings sanitary in all particulars,	183	.....	1.5
Buildings insanitary in one or more points,	12,375	.....	98.5
Buildings having:			
Ordinary stoves in use, jacketed,		3,621	28.8
Ordinary stoves in use, unjacketed,		4,490	35.7
Modern single room, ventilating heaters in use,		2,954	23.5
Direct steam or hot water heat in use,		624	4.9
Indirect steam or hot water heat in use,		117	.9
Indirect hot air furnace in use,		752	6.0
Thermometer in use,		8,784	
No thermometer in use,		3,774	30.0
Moisture supplied to heated air,		4,971	
No moisture supplied to heated air		7,587	60.4
Special air inlets and foul air exits provided,		3,867	30.8
Perfect gravity ventilation,	3,045		
Perfect mechanical (fan) system of ventilation,	180		
Gravity or mechanical systems subject to contaminated air,	642		
Windows the only means of ventilation,		8,691	69.2
Ventilation boards or shields in use,	2,496		
Ventilation boards or shields not in use,	5,680		
Windows not open during session,	515	....	4.1
Basement in clean and sanitary condition,		2,077	
Basement not in sanitary condition,		216	
No basement provided,		10,265	

		Total.	Per Cent.
Buildings of more than one story,		1,724	
Exit doors opening outward,	1,548		
Exit doors not opening outward,	176	.....	*10.2
Iron fire escapes provided,	298		
No iron fire escapes provided,	1,426	.....	*82.7
Fire drills conducted,	867		
No fire drills conducted,	857	.....	*49.7

*Per cent. of the two or more story buildings.

WATER PROVISIONS.

Water provisions sanitary,	2,489	
Water provisions insanitary in one or more points,	10,069	80.2
Number of school buildings having:		
Spring or well on school grounds,	2,248	17.9
Spring or well on nearby premises,	9,083	72.3
Public or municipal water supply,	1,172	9.3
No provisions for drinking water,	55	
Pure or safe local water supply,	10,124	
Local supply menaced by surface and underground drainage,	212	
Local supply menaced by surface drainage,	923	
Local supply menaced by underground drainage,	72	
Bubbling fountain attached to public supply pipes,	120	
Covered water container with fountain attachment,	370	
Covered water container with spigot,	7,241	
Open water container,	1,222	9.7
Water container filled daily and scalded weekly,	4,265	
Container not regularly scalded,	4,476	
Container not refilled daily,	92	
Common drinking cup abolished,	9,431	
Common drinking cup still in use,	3,127	24.9
Individual towels in use,	3,226	
Common towel in use,	8,181	65.1
No towel in use,	1,151	9.2

SCHOOL GROUNDS.

Grounds properly drained,	11,556	
Grounds not properly drained,	1,002	8.0
Grounds in clean and sanitary condition,	11,283	
Grounds polluted with fecal matter, etc.,	690	
Accumulations of manure, garbage, etc., on grounds or nearby,	585	

SCHOOL TOILETS.

Toilets sanitary,	2,015	
Toilets insanitary in one or more points,	10,543	83.9
Number of school buildings:		
Provided with separate toilets for each sex,	12,474	
Not provided with separate toilets for each sex,	84	
Provided with flush closets,	672	5.3
Provided with chemical closet,	38	
Provided with dry or incinerating closet system,	56	
Provided with outside privies,	11,792	93.9
Toilets clean,	9,244	
Toilets unclean,	3,314	
Toilets not draining into stream,	10,784	
Outside privies liable to drain into stream,	1,610	
Flush closets draining into stream,	164	
Outside privies legally screened,	6,788	
Outside privies not legally screened,	5,004	39.8
Privy vaults properly cleaned,	7,402	
Privy vaults not properly cleaned,	4,390	34.9
Vaults disinfected with lime or other disinfectant,	7,015	
Vaults not properly disinfected,	4,777	38.0
Concrete privy vaults,	1,839	
Masonry privy vaults,	842	
Planked privy vaults,	1,188	
Portable box receptacles,	603	
Earth pit,	2,937	
Surface privies,	4,383	
Flush closets properly trapped and vented,	612	
Flush closets not properly trapped and vented,	60	

N. B. The School Code requires fifteen square feet of floor surface and two hundred cubic feet of air space per pupil in modern buildings, and requires that the actual amount of glass surface be at least twenty per cent. of the floor surface in each room.

THIRD CLASS SCHOOL DISTRICTS.

The following third class school districts ranking as townships of the second class voted against medical inspection of schools and Department officers were assigned to make a thorough sanitary inspection of the school premises.

BLAIR COUNTY—Logan.
BUTLER COUNTY—Butler.
CLEARFIELD COUNTY—Cooper, Sandy.
DAUPHIN COUNTY—Susquehanna.
FAYETTE COUNTY—Dunbar, George, German, Menallen, North Union, Perry, Red Stone, South Union.
INDIANA COUNTY—Green.
LUZERNE COUNTY—Hazle.
MIFFLIN COUNTY—Carroll, Derry.
WESTMORELAND COUNTY—Derry, East Huntingdon, Hempfield, Mt. Pleasant, North Huntingdon, Penn, Rostraver, Sewickley, Unity.

Medical Inspection Third Class Districts.

The third class school districts marked * reported the medical inspection of school children for 1915 and 1916 on Form 90-A, after having tabulated the statistics.

There may be some inaccuracies in these reports, because the inspectors did not have the blank until after the close of the school term:

THIRD CLASS SCHOOL DISTRICTS IN WHICH MEDICAL INSPECTION WAS PERFORMED FOR 1915-16.

*Indicates report received on Form 90-A.
†Indicates report received on Form 51.
‡Indicates detailed report not received.

ALLEGHENY COUNTY.

1. Braddock Boro.†
2. Carnegie Boro.‡
3. Knoxville Boro.†
4. Munhall Boro.†
5. Tarentum Boro.†

ARMSTRONG COUNTY.

6. Kittanning Boro.‡

BLAIR COUNTY.

7. Tyrone Boro.*

BRADFORD COUNTY.

8. Sayre Boro.‡

BUCKS COUNTY.

9. Bristol Boro.†

CHESTER COUNTY.

10. West Chester Boro.‡
11. Coatesville Boro.†
12. Phoenixville Boro.†

CLEARFIELD COUNTY.

13. Clearfield Boro.*

CRAWFORD COUNTY.

14. Meadville City.‡

CUMBERLAND COUNTY.

15. Carlisle Boro.†

DAUPHIN COUNTY.

16. Swatara Twp.‡

DELAWARE COUNTY.

17. Darby Boro.†
18. U. Darby Twp.†
19. Radnor Twp.*

ELK COUNTY.

20. St. Marys Boro.†
21. Ridgway Boro.‡

FAYETTE COUNTY.

22. Connellsville City.‡
23. Red Stone Twp.‡

INDIANA COUNTY.

24. Indiana Boro.‡

LACKAWANNA COUNTY.

25. Dickson City Boro.†
26. Olyphant Boro.*
27. Throop Boro.‡

LANCASTER COUNTY.
28. Columbia Boro.‡

LAWRENCE COUNTY.
29. Ellwood City Boro.†

LEBANON COUNTY.
30. Lebanon City.‡

LEHIGH COUNTY.
31. Catasauqua Boro.†

LUZERNE COUNTY.
32. Duryea Boro.*
33. Foster Twp.*
34. Hanover Twp.†
35. Nanticoke Boro.‡
36. Newport Twp.†

MERCER COUNTY.
37. Greenville Boro.†
38. Sharon Boro.†

MONTGOMERY COUNTY.
39. Abington Twp.‡
40. Cheltenham Twp.†
41. Conshohocken Boro.*
42. Lower Merion Twp.†
43. Norristown Boro.‡

NORTHAMPTON COUNTY.
44. Bethlehem City.‡
45. S. Bethlehem City.‡
46. Easton City.‡

NORTHUMBERLAND COUNTY.
47. Coal Twp.‡
48. Mt. Carmel Boro.‡
49. Mt. Carmel Twp.†

SCHUYLKILL COUNTY.
50. Gilberton Boro.†
51. Mahanoy Twp.†
52. West Mahanoy Twp.†
53. Pottsville City.*
54. Shenandoah Boro.*

WARREN COUNTY.
55. Warren Boro.†

WASHINGTON COUNTY.
56. Donora Boro.‡

WESTMORELAND COUNTY.
57. Greensburg Boro.‡
58. Jeannette Boro.‡
59. Monessen Boro.*
60. New Kensington Boro.‡
61. Scottdale Boro.†

STATISTICS OF SCHOOL MEDICAL INSPECTION IN CERTAIN THIRD CLASS SCHOOL DISTRICTS SCHOOL TERM 1915-16.

Number of districts included in this report,		10	
Number of schools inspected,		377	
Number of pupils enrolled (6 yrs. of age and over),		16,535	
*Number of pupils inspected (6 yrs. of age and over),		12,591	
Number apparently normal,	4,343	.....	34.5%
Number found defective,	8,248	.....	65.5%
Number having single defects,	4,292		
Number having more than one defect,	3,956		
Total number of defects,		13,578	
Defective pupils, treatment advised by letter,		8,248	65.5%
Pupils excluded on account of contagious disease,		204	
Pupils readmitted on examination or physician's certificate,		200	

*Per cent. of defectives for these districts based on "Number of Pupils Inspected."

TABULATION BY DEFECTS.

(Reports of Tabulation of Statistics Received on New Form 90-A.)

VISION.			
Pupils having defective vision,		2,272	18.0%
Right eye only,	625		
Left eye only,	633		
Both eyes,	1,014		
Pupils having other eye affections,		271	2.1%
Corneal scars,	11		
Blepharities,	15		
Conjunctivitis simplex,	13		
Conjunctivitis follicularis,	39		
Iritis,	2		
Trachoma,	1		
Strabismus,	90		
Astigmatism,	100		
HEARING.			
Pupils having defective hearing,		413	3.3%
Right ear only,	159		
Left ear only,	176		
Both ears,	78		
Pupils having otorrhoea,		41	

BREATHING.			
Pupils having defective breathing,		1,702	13.5%
Slight impairment,	412		
Serious impairment,	37		
Mouth breathing,	1,253		
Pupils having adenoids (suspected),		1,332	10.6%
Pupils having goitre,		36	.3%
TEETH.			
Pupils having defective teeth,		8,509	67.6%
Unclean teeth,	3,654	.....	29.0%
Decayed teeth,	4,855	.....	38.5%
Gums diseased,		126	
TONSILS.			
Pupils having enlarged tonsils,		3,272	25.2%
Slightly enlarged,	2,414		
Greatly enlarged,	725		
Acutely inflamed tonsils,	133		
CERVICAL GLANDS.			
Pupils having enlarged cervical glands,		757	6.0%
TUBERCULOSIS.			
Pupils reported as having tuberculosis,		69	.5%
Tuberculosis of lungs,	35		
Tuberculosis of glands,	24		
Tuberculosis of bones,	5		
Tuberculosis of joints,	5		
NERVOUS DISEASES.			
Pupils having nervous diseases of grave import,		105	.8%
Chorea,	93		
Epilepsy,	12		
Pupils mentally deficient,		37	.3%
SKIN DISEASES.			
Pupils having skin affections,		441	3.5%
Scabies,	8		
Impetigo contagiosa,	16		
Ring worm,	4		
Head lice,	327		
Eczema,	36		
Acne,	12		
Other skin affections,	38		
DEFORMITIES.			
Pupils having deformities,		134	1.1%
Hunch back,	17		
Club foot,	9		
Curved spine,	32		
Ankylosed joint,	6		
Hare lip,	5		
Cleft palate,	12		
Other deformities,	53		
MALNUTRITION.			
Pupils with sub-normal nutrition,		820	6.5%
Slight,	811		
Marked,	9		
QUARANTINABLE DISEASES.			
Pupils in school that should have been in quarantine,		77	
Chicken pox,	14		
Whooping cough,	3		
Measles,	18		
German measles,	4		
Mumps,	2		
Diphtheria,	16		
Scarlet fever,	20		
MISCELLANEOUS AFFECTIONS.			
Pupils having miscellaneous defects,		52	
Defective speech (including mutes),	18		
Defective heart,	22		
Other defects,	12		

The following third class school districts made their report of medical inspection on the old blank, Form 51, and were tabulated only for normal and defective—not by particular defects:

	County.
1. Braddock Borough,	Allegheny.
2. Knoxville Borough,	Allegheny.
3. Munhall Borough,	Allegheny.
4. Tarentum Borough,	Allegheny.
5. Bristol Borough,	Bucks.
6. Coatesville City,	Chester.
7. Phoenixville Borough,	Chester.
8. Carlisle Borough,	Cumberland.
9. Darby Borough,	Delaware.
10. Upper Darby Township,	Delaware.
11. St. Marys Borough,	Elk.
12. Dickson City Borough,	Lackawanna.
13. Ellwood City Borough,	Lawrence.
14. Catasauqua Borough,	Lehigh.
15. Hanover Township,	Luzerne.
16. Newport Township,	Luzerne.
17. Greenville Borough,	Mercer.
18. Sharon Borough,	Mercer.
19. Cheltenham Township,	Montgomery.
20. Lower Merion Township,	Montgomery.
21. Mt. Carmel,	Northumberland.
22. Gilberton Borough,	Schuylkill.
23. Mahanoy City Borough,	Schuylkill.
24. West Mahanoy,	Schuylkill.
25. Warren Borough,	Warren.
26. Scottdale Borough,	Westmoreland.

TABULATION BY NORMAL AND DEFECTIVE, BY SEX, NATIVITY AND BY COUNTY OF 36,150 CHILDREN INSPECTED IN CERTAIN THIRD CLASS SCHOOL DISTRICTS.

(Reporting as indicated by †)

Area.	Total.	Normal.	Defective.	Normal.		Defective.		Normal.		Defective.	
		Total.	Total.	Male.	Female.	Male.	Female.	Native.	Foreign.	Native.	Foreign.
Total,	36,150	12,379	23,771	6,223	6,156	12,235	11,536	12,048	331	22,699	1,072
Allegheny,	6,216	1,527	4,689	720	807	2,395	2,294	1,450	77	4,375	314
Bucks,	1,144	436	708	205	231	386	322	402	34	656	52
Chester,	3,025	1,137	1,888	565	572	948	940	1,095	42	1,868	20
Cumberland,	1,737	834	903	398	436	409	494	829	5	890	13
Delaware,	1,888	709	1,179	354	355	562	617	396	13	1,155	24
Elk,	502	2	500	----------	2	249	251	2	----------	500	----------
Indiana,	927	326	601	162	164	322	279	316	10	570	31
Lackawanna,	1,781	587	1,194	337	250	646	548	539	48	1,092	102
Lehigh,	748	253	495	123	130	247	248	253	----------	489	6
Luzerne,	1,912	406	1,506	226	180	756	750	389	17	1,402	104
Mercer,	4,026	1,141	2,885	520	621	1,639	1,246	1,115	26	2,672	253
Montgomery,	4,988	1,916	3,072	1,012	904	1,534	1,538	1,886	30	2,967	105
Northumberland,	1,522	481	1,041	257	224	358	483	465	15	1,014	27
Schuylkill,	2,889	1,118	1,771	589	529	883	888	1,116	2	1,767	4
Warren,	1,818	1,185	633	612	573	327	306	1,178	7	633	----------
Westmoreland,	1,027	321	706	143	178	374	332	316	5	689	17

NINE SECOND CLASS SCHOOL DISTRICTS IN WHICH MEDICAL INSPECTION WAS PERFORMED.

ALLEGHENY COUNTY,	McKeesport.
BERKS COUNTY,	Reading.
BLAIR COUNTY,	Altoona.
CAMBRIA COUNTY,	Johnstown.
LACKAWANNA COUNTY,	Scranton.
LAWRENCE COUNTY,	New Castle.
LUZERNE COUNTY,	Wilkes-Barre.
LYCOMING COUNTY,	Williamsport.
YORK COUNTY,	York.

20—16—1918



DIVISION OF MEDICAL INSPECTION.

ABSTRACTS OF REPORTS MADE BY THE COUNTY MEDICAL INSPECTORS, 1915.



ABSTRACTS FROM THE REPORTS OF THE COUNTY MEDICAL INSPECTORS CONCERNING INVESTIGATIONS OF ALLEGED CASES OF COMMUNICABLE DISEASES DURING THE YEAR 1915.

ADAMS COUNTY.

Dr. John R. Dickson, C. M. I.

Adams County is twenty-four by twenty-seven miles in extent. Its area is five hundred and thirty-one square miles. By the census of 1910 it has a population of 34,319, of which 23,580 is rural. The borough of Gettysburg is the county seat, where the medical inspector resides. He has to travel about seventeen miles direct to reach the county line, north, at Cumberland County; eight miles south to the Maryland (Mason and Dixon) line; twelve miles west to the top of the South Mountain at Franklin County, and twelve miles east to the York County line.

Facilities for travel are good to the eastward by State highway, steam railroad, and eight miles by trolley line. West and north there are two steam roads, and several good highways. South much of the territory requires a horse and buggy on account of bad roads, except in dry weather when the automobile can be used. During the winter and spring all dirt roads are difficult of travel, therefore livery expenses are high, even at rates which are ordinary.

I have visited thirteen townships for the purpose of diagnosis, and for inspection of dairy farms. I also visited one borough, temporarily under State jurisdiction, not having a board of health of its own appointing. Ten of the eleven boroughs in the county have their own boards of health. The county is divided into nine health districts, each district in charge of a health officer. At present eight health officers are serving the nine districts, D. C. Krise having resigned from the Conewago-Berwick district. Of these townships the latter (Berwick) is temporarily served by J. Chester Bell of district 157, the former (Conewago) by T. O. Gouker of 156. The service in each of these two districts is satisfactory.

A total of 175 cases of communicable diseases were reported during the year by health officers as follows:

Health Officer.		
J. J. Kohl,	Franklin Township,	10
Charles Adelsperger,	Menallen Township.	
	Butler Township,	6
John H. Delp,	Huntingdon Township.	
	Latimore Township.	
	Tyrone Township,	13

H. V. Rahn,	Mt. Pleasant Township.	
	Oxford Township.	
	New Oxford Borough (Temp.),	47
T. O. Gouker,	Germany Township.	
	Union Township.	
	Mt. Joy Township.	
	Conewago (Temp.),	21
J. Chester Bell,	Straban Township.	
	Cumberland Township.	
	Berwick (Temp.),	53
J. Harry Pecher,	Highland Township.	
	Freedom Township.	
	Hamiltonban Township.	
	Liberty Township,	13
Daniel Mummert,	Reading Township.	
	Hamilton Township,	12
Number of cases of Tuberculosis Pulmonalis reported in the county, all fatal...		12

Of these 175 cases of communicable diseases reported there were:

Typhoid fever,	29	Measles,	5
Scarlet fever,	12	Chicken pox,	43
Diphtheria,	9	Mumps,	43

I find that in 1911 the county had sixty-seven cases of typhoid fever reported. This year (1915) furnished less than half that number. This report of 175 cases of all forms of contagions reported is small, 1911 having furnished 239 cases. The total amount of work done this year was less than usual. In August there was no work to do, hence no voucher was rendered.

The apparent morbidity in a given health district may be large in accordance with the number of communicable diseases reported. It may be small for the same reason. Health officers are not equally active in discovering contagions, nor are physicians equally faithful in making reports.

School sentiment and community sentiment, when hostile to quarantine and the consequent school exclusion and school closing, are a barrier to complete morbidity reports. Mumps, chicken pox, measles and mild forms of scarlet fever are kept hidden from the Department's officials and many are undiscovered.

Since the act of 1915 was passed a report of every case of contagion, and its proper recording, has special value. Few families, few physicians, and no teachers have kept a record of children or pupils infected with communicable diseases in the past. Such a record, if available now, would enable many pupils to continue school attendance, who, though immune through a former attack, are barred, being contacts in quarantine.

I urge teachers to help the health authorities to discover all present or prospective pupils who are infected, that they may be recorded on the county medical inspector's "Additional Memorandum Sheet," which is a permanent record.

I advise parents to enter on a family record all cases of contagion in the family, with date.

I advise teachers to record in their school report book all cases which are found among their pupils.

I instruct each health officer to issue a card report (Form 36) for each case of communicable disease in order that the required proof of immunity thus made may be easy to obtain, and school depletion and unnecessary quarantine may be reduced to a minimum.

ALLEGHENY COUNTY.

Dr. S. M. Rinehart, C. M. I.

Typhoid Fever: On January 14, 1915, Dr. R., of Federal, notified me that a small epidemic of typhoid fever had existed at Presto, a little mining town of about three hundred inhabitants. Dr. Mateer, who has assisted me in many similar investigations, went to Presto and with Dr. R. made an investigation. There were seven cases in all. The source of the first case, which developed in a family by the name of Resek, was not known. Three others in the same family contracted the disease. The infection of these cases was traced as follows:

First the contamination of the Resek cesspool by deposit of excrement that had not been disinfected before a diagnosis was made.

Then a contamination of the Resek well, and then that of a neighboring well, used by a family named Ruschel, from which probably the fourth and fifth cases developed.

Finally the contamination of milk sold by the latter family, from which two cases developed in a family living half a mile away.

The following instructions were given and rigidly carried out: Use of water from both wells was forbidden and the wells ordered cleaned; all cesspools were thoroughly cleaned and lime was freely used; the sale of milk from the infected house was discontinued. By public notices all persons were advised to boil water used for drinking and cooking.

No new cases developed after January 4th.

On July 13, I was notified by Dr. McG., of Carnegie, that there were several cases of typhoid fever in Scott Township on the Washington pike. I had Dr. H. O. Mateer make a preliminary inspection on that day and on the 15th we went over the ground together.

In all there were in this outbreak six cases of typhoid fever. The first case was a girl of fifteen years—attacked about June 20th. No definite history of a source of infection could be obtained. The second case developed in the family living next door, and one member after another was attacked in the latter family until four cases existed, the mother, father, son and daughter. The sixth case developed in the family living on the hill about two hundred feet back from and above the dwellings of the previous cases. This case was that of a child aged nine, who played in the yard with the children of one of the affected families below.

It seemed clear that whatever was the source of the first case the subsequent cases resulted from it on account of overflowing cesspools and contamination of wells with surface water. I met the health board on the day of my inspection and gave them verbal instructions, which I confirmed on the same day by the following letter:

> "Confirming our conversation of Thursday and pending any further instruction from the Department at Harrisburg, I would suggest to you the following procedure in the typhoid fever cases on Washington Avenue.
>
> "First, all excrement should be disinfected before disposal by pouring into it two or three ounces of formaldehyde (40%) solution and allowing it to stand for at least a half hour.
>
> "Second, there should be some method devised for screening the Victor house so that flies are prevented from coming into contact with the patients.
>
> "Third, all cesspools should be cleaned and then treated generously with lime.
>
> "Fourth, such disposal should be made of this excrement removed from cesspools that it will not be allowed to come into contact with surface water, thus contaminating Chartiers Creek.
>
> "Fifth, the ground in the Mellington and Victor premises should be thoroughly covered with lime as it has been contaminated with overflow.
>
> "Sixth, all the people in that neighborhood should be instructed to boil the drinking water for at least twenty minutes before using.
>
> "Seventh, dairymen should be instructed not to leave milk bottles at any one of these houses but to pour the milk into vessels belonging to the family."

Scarlet Fever: On March 15, Dr. R., of East Pittsburgh, asked me to see a case with him in Turtle Creek to determine whether it was scarlet fever or some non-communicable disease. The case had already been declared to be scarlet fever and five days had elapsed since the diagnosis was made. I found the child, an infant of less than one year old, perfectly well except for a faint punctate rash all over the body.

While I was in doubt that the rash was due to scarlet fever, I was unable to determine positively that it was not. It somewhat resembled a fading German measles eruption. I suggested that it would be inadvisable to remove the quarantine in the circumstances because the child apparently had scarlet fever or German measles. No other doctor had seen the baby.

Under my instructions, Dr. Mateer on November 2d investigated scarlet fever at Clairton. He found three cases in three different families, and in none of them was there any attempt at isolation of the patient, although the male members of the households were going back and forth to work daily. There was every reason to believe that at least ten cases of scarlet fever had existed in this community that had not been quarantined, owing to the lightness of the disease and the failure of the families to call in a physician. I ordered a strict quarantine and a thorough disinfection of school buildings.

On November 4, I instructed Dr. Mateer to make an investigation of scarlet fever existing in Fairywood, Chartiers Township. He found three cases quarantined. The first case was diagnosed about October 7 and the children kept from school. The house was not placarded

until October 15. The next case was quarantined October 28. The third case was diagnosed and quarantined November 2. The latter case was visited on the evening of October 31, by a family living near, in which a case developed several days later. The rest of the children from this home had been attending school. Strict quarantine was ordered and the school was fumigated. These families were all instructed not to return milk bottles.

Trachoma: On October 18, I sent Dr. Mateer out to St. Paul's Orphan Asylum, according to instruction from Harrisburg, for the purpose of examining the children to determine whether there were any cases of trachoma and how many in the institution. I gave him a personal letter to Father Lynch, superintendent. Father Lynch made gentle but firm resistance to the proposed examination, stating that there were no cases of trachoma in the institution at that time and that the case complained of was a boy who worked on a farm and was not an inmate of the institution, never having been examined by the physician to determine his condition. He referred to Dr. H. H. Turner, who is ophthalmologist to the home.

Dr. Mateer returned without having made more than a cursory examination, as he wanted advice before proceeding further. I asked him to get a letter from Dr. Turner to me, which he did. Dr. Turner stated in his letter that there had not been any acute trachoma in the institution for several years, and although there were a few old chronic cases, they were long past the contagious stage and were under daily supervision. These cases were subsequently reported to the Department at Harrisburg.

Suspected Smallpox: On February 27, I was notified by Dr. Hill, superintendent of the Allegheny County Home, that they had a case in the insane department with an eruption very much resembling variola. I went at once to inspect the case which was in that of an Italian, aged 27, with dementia praecox. This man had been over four years in the penitentiary and had been removed to the home on or about January 10. I found a very well developed rash all over the body, as much upon the uncovered as upon the covered parts. The rash very much resembled variola in the beginning of the vesicular stage, and besides I found no mark of successful vaccination upon his body. The vesicles were easily obliterated and the surrounding areolae were not characteristic. I gave a tentative diagnosis of chicken pox, but advised strict quarantine and the usual precautions until my visit the next day, at which time I found the rash receding instead of developing. The vesicles were entirely gone and the red areolae much faded. There was practically no elevation of the rash. This condition was undoubtedly not variola and not entirely characteristic of varicella. However, we quarantined the man for the latter disease.

The diagnosis varicella did not explain the mystery of how he contracted it, as he himself had had no visitors for a long time. It is likely that some one visiting another patient brought the infection to his ward.

Smallpox: In accordance with a telegram received from Harrisburg on September 13, Dr. Koenig, who was acting as county medical inspector during my illness, went on the afternoon of that day to Braddock to examine a case of alleged smallpox, a man of about forty years of age without apparently any visible means of support or permanent habitation. The eruption lacked some of the typical features of smallpox, but in the main everything tended to verify the diagnosis made by the attending physician. Dr. Koenig recommended his removal to an emergency hospital and the vaccination of all the inhabitants within two squares surrounding the house in which he was discovered and temporarily isolated.

There was considerable difficulty in tracing the whereabouts of the case previous to its discovery, as he seemed to have no regular domicile, living at least part of the time among foreigners who refused or claimed to be unable to give information.

On September 25, I sent Dr. Mateer to Braddock to make a thorough investigation as to vaccination and quarantine of all contacts, according to instructions from Harrisburg. He reported that the house in which the case was discovered had been quarantined, but several of the members of the family had not been vaccinated within the last five years. He instructed that this be done at once. He also reported that the health authorities had vaccinated one thousand persons in the immediate vicinity since the discovery of the case. No secondary cases occurred.

GENERAL SUMMARY OF COUNTY MEDICAL INSPECTION FOR THE YEAR 1915.

Forms 36 received,		597	
Forms 37 received,		428	
Examined cases alleged to be:—		Examined cases found to be:—	
Variola,	2	Variola (Dr. Koenig),	1
Scarlet fever,	8	Scarlet fever,	8
Varicella,	0	Varicella,	1
Health officers instructed,		8	
Investigations of epidemics in boroughs,		3	
Investigations of drainage complaints,		1	

ARMSTRONG COUNTY.

Dr. T. N. McKee, C. M. I.

In making report of the activities of your medical inspector for Armstrong County for the year ending December 31, 1915, the same lines will be followed as in former annual reports, and will be largely

statistical, detailed reports of the work having been sent to your Chief Inspector as it was performed during the year.

Industrial conditions, and consequently population, are about the same as at the close of 1914 in the various townships of the county; we, therefore, have had about 45,000 persons under our supervision during the year.

During the year 798 persons were examined for the purpose of establishing the diagnosis. This is 202 less than were examined for the same purpose last year.

Twelve public schools were closed and fumigated during the year—five to check outbreaks of diphtheria, two each for scarlet fever, measles and chicken pox, and one for whooping cough. These schools were distributed in ten townships. It is a source of satisfaction to be able to report that the school boards, as a rule, throughout the county show an increased interest in sanitary matters and preventive medicine from year to year. Through the county superintendent "clean up day" was inaugurated last fall, when parents and friends of the pupils united with them in cleaning up the school rooms, and in beautifying the grounds by grading, planting shade trees, repairing fences, the liberal use of whitewash, etc., and the coming fall we anticipate even greater interest and results.

Five dairy farms were inspected on account of the development of typhoid fever on the premises, and two each on account of scarlet fever and diphtheria. The stock was transferred from two of these farms, and the sale of milk and milk products was ordered discontinued temporarily from the remaining seven.

Inspections were made at various times in twenty-two of the twenty-seven townships in the county, and under special instruction from your office Applewald, Atwood and Kittanning Boroughs were visited for the same purpose. Waynesburg Borough, Greene County, was also visited under special instruction from your office. Official business necessitated traveling 697 miles by rail and 1,673 by livery, a total of 2,370 miles.

The eleven health officers sent to this office 703 reports of placarding (Form 36) and 718 reports of disinfection (Form 37), making a total of 1,421 reports received, copied and forwarded to your office. There was a decrease of 104, or nearly thirteen per cent., from the preceding year in the number of communicable diseases reported. These reports came from every township in the county and in every month of the year. Only fifteen of the diseases which the laws of the Commonwealth require physicians to report to the health officers were brought to the attention of this office, as follows:

Cerebrospinal Meningitis: Two cases of this disease developed, one in Madison Township March 8, and the other in Cowanshannock Township April 23. Neither of them required any action by this office.

Chicken Pox: This disease was reported from thirteen townships, Perry leading with twenty-five cases. A total of eighty-four cases were reported, a decrease of six from the previous year. In order to check outbreaks it was necessary to close two schools and have the rooms fumigated.

Diphtheria: Compared with the previous year there was a decrease of twenty-six, or an even quarter in the number of cases of this disease reported. The total number was seventy-eight. They came from sixteen townships, Mahoning leading with fourteen cases. Among measures adopted to check outbreaks of the disease, five schools were closed and the rooms fumigated, and the sale of milk and milk products temporarily discontinued from two dairy farms.

Erysipelas: Ten cases of this disease were reported from six townships, four of them being from Madison. From the dates of onset and location, it does not seem probable there was any relation between them. The several premises were fumigated by the health officers on receipt of request from the attending physician.

German Measles: One case of this disease was reported from Manor Township and seven from Red Bank. All were under the care of physicians and required no action on the part of the county medical inspector.

Impetigo Contagiosa: Three cases of this disease were reported. They were found by your county medical inspector when investigating a "breaking out" among the children in Eddyville school on request of a citizen of the district. Enforcing the regulation of the Department prevented further spread of the disease.

Measles: Eighteen townships reported a total of 322 cases of measles during the year, being an increase of eighty-three over the previous year. The disease was especially prevalent and hard to control among the foreign residents in the various mining settlements. In order to check outbreaks two schools were closed and the rooms fumigated.

Mumps: This disease developed in seven townships, a total of twenty-three cases being reported, an excess of six over the previous year.

Pneumonia: Only two cases of pneumonia were reported during the year, one from Brady's Bend and the other from Cowanshannock Township, and neither required any action by this office.

Scabies: One case of this disease was found by your county medical inspector in Burrell Township, reported by the householder on Form 34 as chicken pox. Enforcing proper regulations prevented spread of the disease.

Scarlet Fever: This disease spread in sixteen townships, Manor leading with eleven cases, and a total of forty-seven being reported during the year. This is a reduction of twenty-nine cases from last

year, a little over thirty-eight per cent. In order to check outbreaks, the sale of milk and milk products from two dairy farms was ordered temporarily discontinued, and two schools were closed and the rooms fumigated.

Smallpox: Thirty-one cases of smallpox were reported, sixteen from Washington, thirteen from Pine and two from Kittanning Township. The disease was brought into Washington Township by a visitor from Cleveland, Ohio, and none of the cases was diagnosed until discovered by your county medical inspector in searching for the source of infection of a case that developed in Kittanning Borough. There was no spread of the disease after Department regulations, including vaccination of all known contacts, were put in force.

Tuberculosis: Eleven townships reported twenty cases of this disease as against seventy-three for the previous year. Especial care has been exercised to see that all premises occupied by tuberculous individuals are properly disinfected when vacated by them.

Typhoid Fever: Compared with the previous year there was a reduction of a full third in the number of cases of typhoid fever reported, the total number being sixty-six against ninety-nine in 1914. These reports came from nineteen of the twenty-seven townships in the county, Manor leading with ten cases. It is pleasing to note the care with which Department regulations are observed, as not one of all the cases can be charged to secondary infection. It is also gratifying to your representative to note the fact that none of the cases could be traced to any of the five dairy farms put under special regulations on account of the development of the disease on them.

Whooping Cough: Fifteen cases of this disease were reported during the year as against 134 in 1914. In order to control the disease, one school was closed for a time and the room fumigated by the school board before permission was given to resume sessions.

The township health officers have performed their duties in a satisfactory and efficient manner during the year.

Each year brings increased demands on your representative for advice along the numerous lines of sanitary science and preventive medicine, and we have made it an inflexible rule to give all such our prompt and careful consideration.

This report would be incomplete without an acknowledgment of the courtesies extended me by my fellow practitioners throughout the county, all of whom it is my privilege to know personally.

BEAVER COUNTY.

Dr. Bruce H. Snodgrass, C. M. I.

The work in Beaver County in 1915 was entirely routine. The following reports were received:

	Cases.		Cases.
Measles,	204	Pneumonia,	8
Chicken pox,	80	Erysipelas,	10
Mumps,	67	Whooping cough,	47
Scarlet fever,	42	German measles,	2
Diphtheria,	22	Impetigo contagiosa,	1
Typhoid fever,	26	Smallpox,	1
Tuberculosis,	10		

Smallpox: The case of smallpox was contracted at East Liverpool, Ohio, where there was an epidemic of that disease. It was promptly located and placed under absolute quarantine, contacts vaccinated, with the result that no new cases developed.

The following cases of alleged communicable disease were personally inspected by C. M. I.

Measles,	61	Mumps,	43
Diphtheria,	1	Scarlet fever,	9
Variola,	1	Chicken pox,	41

Dairy farms were inspected for the following diseases:

Typhoid fever,	2	Scarlet fever,	2

The sale of milk was stopped from four dairy farms.

Five boards of health were conferred with in regard to their work—Baden, Koppel, New Galilee, Glasgow and Aliquippa.

Miles traveled by railroad and trolley 537; by livery 494.

BEDFORD COUNTY.

Dr. Walter de la M. Hill, C. M. I.

In January a case of smallpox appeared in Woodbury Township, near Woodbury Borough, presumably contracted in Blair County, near Hollidaysburg. The diagnosis was confirmed, the case quarantined and the sale of milk and other farm produce stopped. No other cases developed.

A suspected case of diphtheria in Snake Spring Township was examined but proved to be an aggravated case of tonsillitis.

In February epidemics of scarlet fever appeared in Cumberland Valley Township, and of chicken pox in West Providence and Hopewell Townships. After visiting these localities and directing certain precautions to be taken, the epidemic abated in about a month. I also examined and diagnosed a case of glandular fever in Colrain Township.

In March, after receiving a report from the health officer of epidemic in Bloomfield Township, suspected of being scarlet fever, I visited the community and found what one physician diagnosed as Bill Snyder's itch to be genuine scarlatina. After quarantining a family in which there were five cases, directing the school to be closed for a period, owing to other cases having appeared previously, and giving general instructions to individuals in the community, the disease ceased to spread.

Measles appeared in Liberty Township in June. After examining cases and ordering them quarantined, the disease ceased spreading during the summer.

During August, a report of a suspected case of smallpox in a foreign family came to me from Broad Top Township. On examination I found the disease to be malaria.

Typhoid fever appearing in Everett Borough during the month of September among planing mill workers, a census of the cases was taken, the various water supplies were examined, and it was decided that the disease was transmitted through the drinking water.

Scarlet fever again appeared in Cumberland Valley Township during the month of September, and in the course of my inspection I found five cases of impetigo contagiosa, with a history of having been vaccinated some time before.

During the month of October, there was an outbreak of diphtheria in Snake Spring Township, originating in a family in which a wrong diagnosis had been made, and spreading through the Riverside school. After some difficulty all contacts were located and by the free use of antitoxin the spread of the disease was stopped.

During the month of November, I made a sanitary inspection of the Rainsburg borough schools, investigated epidemics of scarlet fever in Southampton Township, chicken pox in Liberty Township, and took many throat swabs of suspected cases of diphtheria in Snake Spring Township. There being some difficulty between two physicians in Bedford Borough as to the diagnosis of a case of typhoid fever, I examined the case and pronounced it typhoid.

During December, I examined the pupils in Manns Choice borough schools, finding many cases of impetigo contagiosa, investigated epidemics of measles and scarlet fever in Pleasantville Borough, chicken pox in Broad Top and Liberty Townships, measles in Bedford Township and whooping cough in King Township, and corrected the diagnosis of diphtheria in Bedford Borough.

Chicken pox, scarlet fever and measles were pandemic throughout the whole county during the year. Typhoid fever became almost epidemic in some sections of the county.

BERKS COUNTY.

Dr. Israel Cleaver, C. M. I.

I herewith submit a summary of the work done in Berks County for the year 1915.

TABULATED STATEMENT.

Townships in county,	43
Health officers,	17
Card forms No. 36 received,	531
Card forms No. 37 received,	451
Visits by county medical inspector,	56

Of the reportable diseases named by the Department only eleven appeared in this county and are given in numerical order of frequency as follows:

Diphtheria,	126	Mumps,	16
Chicken pox,	110	Tuberculosis,	11
Whooping cough,	97	Erysipelas,	9
Typhoid fever,	64	Pneumonia,	5
Measles,	45		
Puerperal fever,	1	Total,	526
Scarlet fever,	42		

Exeter had the largest number, viz: sixty-six, of which sixty-two were chicken pox, or nearly fifty per cent. of all the cases in the county.

Muhlenberg is second in order with forty cases, chicken pox numbering ten.

Spring follows with thirty-nine, whooping cough, twenty-nine cases, being the prevailing disease.

Next is Heidelberg with thirty cases, all diphtheria, and the largest number in any one township of the district.

Fifth in order showing prevalency of any one disease is Cumru with a total of twenty-eight cases, eighteen of which were chicken pox.

In the other townships the distribution was in such numbers that prevalency cannot be attributed to any one class.

Two townships, Windsor and Douglass, were exempt from any communicable illness, at least no cases were reported therefrom.

Typhoid fever appeared in twenty-six townships but in none in sufficient numbers to constitute an outbreak.

Washington Township had the largest number, viz: six distributed among four families.

Diphtheria was reported from twenty-six townships and the only other disease with so wide a range of division.

The cases in Heidelberg Township were confined almost entirely to Bethany Orphanage near Womelsdorf. The outbreak started in the latter part of September and persisted until the close of the year. Dr. J. S. Livingood, of Womelsdorf, who has medical care of the insti-

tution, conferred with me at intervals, and I know that everything possible was done not only in the treatment but also to limit the spread of the disease.

The best evidence of this is the fact that the inmates of the orphanage number 192 and twenty teachers, and yet but thirty-five cases developed during the whole period of infection.

Of the other so called mild diseases, viz: chicken pox, measles, etc., the old story of communication may be repeated. Large numbers of people still profess to believe they are unavoidable and need no physician, hence the first cases appearing in the neighborhood were not reported to the health officer and no quarantine placed or observed. It was hoped that sections 9 and 10 of act 268, May 28, 1915, would secure the aid of the public school teachers in picking up these first infected families, but so many professed ignorance of the law, claiming not to have received the copies sent out by the Department, that their aid was negligible.

This report, of course, does not include diseases occurring in cities and boroughs of the county excepting Bechtelsville, entered into and controlled by the Department upon complaint that the board of health was not adequately organized and did not act in its cases of communicable diseases. The proceeding by which this was brought about has already been communicated to your office. Fourteen cases of diphtheria were reported and duly attended to by our health officer, W. A. Stengel, of this district.

Such contradicting statements were made that source of contact of first cases are indeterminate.

BLAIR COUNTY.

Dr. Joseph D. Findley, C. M. I.

During the year 1915 reports were received of contagious diseases as follows:

Measles,	45	Cerebrospinal meningitis,	4
Diphtheria,	40	Whooping cough,	4
Scarlet fever,	31	Chicken pox,	3
Typhoid fever,	22	Smallpox,	1
Mumps,	14	Erysipelas,	1
Tuberculosis,	8		

Inspections were required as follows:

On January 21, I went to the vicinity of Newry and found three cases of unrecognized scarlet fever that had not been seen by a physician.

On September 11, I went to the vicinity of Williamsburg and found a young man with typhoid fever on a dairy farm. The sale of milk was stopped. The disease had been acquired at a picnic some twenty miles away.

On September 24, I went to Sarah Furnace and found several cases of scarlet fever. No physician had been in attendance.

On October 6, I was asked to confirm the diagnosis of chicken pox in a patient.

On October 22, I went to Cross Keys at the request of the school teacher to examine several suspected cases—none were contagious.

On October 28, another case of chicken pox was seen to confirm the diagnosis.

November 10, by request from Harrisburg I went to Duncansville and Newry to stir up the local boards of health.

November 25, the only case of smallpox for the year was found on the outskirts of Altoona. No history was obtainable to show its source.

November 25, a family in Logan Township had asked for an examination of their water supply. When the health officer went for it he was suspicious that they had typhoid fever. I found that there had been four cases in the family, and that while the first child was sick the mother had made and sold cottage cheese to various persons in Altoona and vicinity, among whom we found eight cases of typhoid fever that we previously could not account for.

November 26, investigated supposed nuisance from a slaughter house in Logan Township. Found the conditions good.

November 29, saw with the attending physician a case of purpuric chicken pox. Patient recovered.

December 4, visited Claysburg to diagnose measles in the case of a delirious foreigner.

Statistical Summary of Work Done During the Year.

Forms 36 received,	158	Cases examined alleged to be:—	
Forms 37 received,	147	Smallpox,	1
Dairy farms inspected for:—		Scarlet fever,	5
Typhoid fever,	1	Measles,	1
Sale of milk stopped,	1	Chicken pox,	3

BRADFORD COUNTY.

Dr. T. Ben Johnson, Jr., C. M. I.

Again it is my pleasure, and for the fifth time since doing Department of Health work, to submit to you from records on file in this office a brief report of the work as done by me and the health officers of Bradford County, the third largest county in the State of Pennsylvania, for the year 1915.

As county medical inspector, I have very often found it necessary for me personally to investigate communicable diseases, reported to me direct from the health officers in whose district the disease may exist. In summing up this report, I find that I have been obliged to visit twenty-five individual townships, and properly to do this it was necessary for me to travel by railroad and also by livery, to say nothing of the miles I walked on foot. By rail I covered two hundred and four miles, and by livery one thousand and ninety-two miles, thereby saving more time by livery than by railroad.

During the year there have been received in this office Forms 36 to the number of 644. These have been for fifteen of the diseases as required by law to be reported and is an increase over the number reported in 1914 in both cards and cases. Forms 37 show a total of 489 disinfections as performed by the twelve health officers doing work in the county. All cards are carefully examined immediately upon receipt, being properly entered upon the memorandum record and then forwarded directly to the Harrisburg office.

In 1915 I personally investigated 176 individual cases; sometimes several cases of one and the same disease were investigated upon one and the same trip. Cases as reported are as follows:

Anthrax: Much to the delight of all concerned, only one case of anthrax has been reported during the year. This case I personally visited for my own satisfaction and to become better versed in the sypmtomatology of the conditions existing relative to this case and the disease. In this community we have occasionally a scattered case or two of anthrax and it has been my pleasure to see but very few cases. Most of the cases of anthrax which have been reported in this county have come from the vicinity of Monroe Township, where the Elk Tanning Company of Powell handles many hides.

Chicken Pox: One hundred and thirty-seven cases of this disease were reported by physicians and householders in eighteen of the thirty-seven townships, the greater number occurring the first six months of the year, but pretty well scattered throughout the entire year. It was necessary for me to make seven inspections, in the course of which I visited six townships to check the diagnosis in sixty cases; on four of the trips I was forced to close the school inspected for fumigation. In 1914 only thirty-four cases of this disease were reported, so it is quite evident that this disease has been very prevalent.

Diphtheria: During the year there were reported to me fifty-six cases of this disease in sixteen different townships, and out of this number I personally investigated seventeen cases in ten townships. In this connection was a dairy with fourteen of the cases, on which farms dairy restrictions were established and the sale of milk prohibited unless taken care of from without the infected house. On

one of the trips, five cases of putrid sore throat were reported to me in Athens Township; these were inspected by me and the usual morbidity forms went forward to Harrisburg. On February 19th I received an order issued by the Chief Medical Inspector to go into Wyalusing Township to inspect several cases of suspicious throat trouble. In this instance I made the trip but could not diagnose diphtheria. This disease existed in every month of the year but four, and is an increase over the number reported for the year of 1914.

Erysipelas: Eight cases of this disease have been reported to this office during the year in five different townships, and it is my firm opinion that the doctors do not generally understand that this disease must be reported according to law, as I am positive that more than this number of cases have existed. How to correct this condition I am at a loss to suggest.

Measles: During the year one hundred and nine cases of this disease were reported to me from seventeen different townships, Canton and Pike Townships having the greatest number of cases. Out of this number I personally made two inspections in Athens Township and Canton Township. On February 15, while in Athens on an inspection for diphtheria, I was able to diagnose five cases of measles; and on May 14, I received an order from the Chief Medical Inspector to make an inspection at Canton for measles, which had developed into an epidemic. This was done by me, and reported to the Department in the usual way. In 1914 there were reported to this office one hundred and ninety-two cases, which was a much larger number than this year. Let us hope that this disease becomes less prevalent as time goes on.

Mumps: The total number cases reported of this disease for 1915 is ninety-two, and they occurred in fourteen different townships. Out of this number it was necessary for me to make a personal inspection of thirty-seven cases in four townships, which resulted in the closing of schools in East Athens, South Towanda and Powell. On February 4, I received an order from the Chief Medical Inspector to inspect cases of mumps in the East Athens school. This I did, and my trip was reported at time of inspection in routine way to Harrisburg. On February 25, mumps were reported in the North Towanda district. I made an inspection in that district, found four cases of mumps but no direct school infection. On May 17, mumps were again reported in North Towanda, when I went to that place but found no cases. On April 15, mumps were reported in Monroe Township, when upon receipt of this information I immediately made a trip to that township and into Powell, and was able to check thirty-one cases. I closed the Powell school for fumigation. This was indeed a hard trip, as I met opposition from all sides. The people were

very reluctant to being quarantined, but finally obeyed the law. This disease seemed most prevalent during the months of April and May, and is a considerable increase over the number reported last year.

Malarial Fever: One case of this disease was reported from Springfield Township during the year 1915. In passing mention I would say that very little if any malarial fever exists in this county, but am sorry to say that probably some of the cases which had existed are not reported properly.

Impetigo Contagiosa: During the year 1915 fifteen cases of this disease were reported to this office on regular card forms, the cases existing in four separate townships, only two of which townships join each other, the others being separate and distinct. These cases demanded one inspection by me in Overton Township, where laxity in reporting the disease existed and no certificate of recovery had been issued by the physician. It was therefore up to me upon order from the central office to investigate conditions for the purpose of readmitting children to school as soon as the disease had subsided. This is the first time to my knowledge that this disease has ever been reported.

Infantile Paralysis: Two cases of infantile paralysis were reported to this office in two separate townships in the county. Neither of these cases demanded any personal attention from me, and I am therefore unable to give any special information concerning them. Am pleased, however, to know that more of these cases have not existed during the year.

Pneumonia: Three townships in this county have reported eleven cases of true pneumonia existing during the year. It is my opinion that several, in fact a great many, cases of this disease have existed, but they have not been properly reported through the regular routine channels.

Scabies: It is with a great deal of delight that we report only one case of scabies existing in the county during the year of 1915. It is therefore to be presumed that we are extremely cleanly and that our population is somewhat above the average of intelligence and personal cleanliness.

Scarlet Fever: Twenty-nine cases of this disease were reported in twelve different townships, and from card reports received from the health officers, it was necessary for me to investigate several cases personally. I inspected eight cases in six townships, there being a dairy involved in each case except one. I established the usual dairy restrictions for scarlet fever, and in each instance to my knowledge the law was obeyed and lived up to. On October 28, I made an inspection in Wysox Township, where several cases of scarlatina were reported, ordered the school closed for fumigation, after which no

epidemic was feared. The greater number of these cases were reported in Pike, Athens, Smithfield and Herrick Townships. The number of cases reported for 1915 equals the number reported for 1914.

Tuberculosis: During the year 1915 nineteen cases of this disease were reported in ten different townships, and I feel sure that physicians are now learning to report this disease as communicable. During the year I made but one inspection, which was in Wysox Township on July 13, inspecting the Kissell farm, where the daughter was ill with the disease, and the father, living in the same house, was caring for herd and dairy products. I ordered the abatement of this method or to have Mr. Kissell live outside the infected premises, which he agreed to do. Most all of the cases reported during the year are or have been patients at this dispensary.

Typhoid Fever: This disease in this county has totaled a number of twenty-three in eleven separate and distinct townships, and occurred in nearly every month during the year. Out of this number it was necessary for me to make eight inspections, diagnosing ten cases, and a dairy being involved in each instance except one. This instance was on December 8, when I was ordered by the Chief Medical Inspector to look over the typhoid condition in Athens and Sayre Boroughs. Several cases of typhoid were reported to me from Athens Township, and to decide the source of infection I was ordered to look up all cases existing in and around Athens Borough. One infection was thought to be due to eating oysters, while it may be safe to lay the blame to the Sayre water system. In other instances, where dairies were inspected, the householders seemed very willing to comply with Department regulations regarding the care of milk and herd, and it was a pleasure to deal with these people. This disease even now seems to be prevalent through the Troy district, where a few years ago we had such a raging epidemic. In 1914 thirty-three cases of this disease were reported, and it now looks as though this disease was becoming more quiescent every year.

Whooping Cough: During the year one hundred and sixty-one cases of this disease were reported by card form by the various health officers in this county, coming from eleven different townships. Out of this number it was necessary for me to make two inspections, one on September 24 in Leroy Township to check up several cases of this disease. On this trip I was obliged to close the Hogland and West Leroy schools for fumigation. This caused no controversy and my orders were carried out according to the regulations of the Department. The other trip was made on December 25, to check whooping cough in Sylvania Borough, which will be explained in another paragraph. This is a greater number of cases than I wish had existed, and I hope that next year this disease may be quite extinct.

Special Inspection (Sylvania Borough): On November 15, by order of the Commissioner, I went to Sylvania Borough to reorganize their board of health, which was extremely lax relative to health laws, and at that time I closed the Sylvania Borough school because of an epidemic of whooping cough and ordered disinfection performed. The borough has since taken up the work of the Health Department and I trust that no further complications will arise concerning health laws.

Hadlock Case: On November 27, I went to Athens and Athens Township to inspect conditions existing relative to a dairy where typhoid had been reported. Upon my return I had many urgent requests of the charitable ladies at Athens to inspect the Hadlock case in East Athens. This condition has been thoroughly reported in several letters sent to the main office in the usual way.

During the year of 1915, my work as county medical inspector has been so arranged as not to interfere any more than possible with my private practice, which at times especially in the busy season is very arduous. At no time have I been unable to complete the work as I should except in one instance when a severe and increasing storm, in January, made it impossible to finish the trip.

It has been my pleasure to use an automobile a great deal in the work and thereby greatly to lessen the number of hours consumed and save the Department considerable expense.

There have been no severe epidemics in the county during the year.

In my inspections whenever possible it has been my pleasure to call upon a great many of the physicians and to be of assistance to them in explaining Department regulations with reference to their cases, and also to have various physicians call upon me in my office relative to Department measures.

It is my pleasure to commend most of the physicians for their willingness to comply with Department regulations and to thank them very kindly for their cooperation.

I would like also to take this opportunity to commend all the health officers who have done their work very well, and it has been a pleasure to be associated with them. Some of them are very old, and bad roads, severe storms and bad weather make it extremely hard for them to complete their duties in the time allowed. It is to these men that I wish to extend my sincere thanks for their cooperation.

BUCKS COUNTY.

Dr. I. Swartz Plymire, C. M. I.

I beg to submit a summary of the work in Bucks County for the year 1915, during which time the duties of the county medical in-

spector required visits to the different townships for the inspection of communicable diseases; inspection of dairy farms during the course of typhoid fever, diphtheria and scarlet fever; and the examination of alleged cases of communicable disease not under the care of a physician.

I traveled 4,690 miles by automobile, fifty-two miles by railroad, and thirty miles by horse and buggy. A detailed report of each day's work was forwarded to your Chief Medical Inspector for further instruction, guidance and filing.

During the year 809 reports of placarding for communicable diseases (Form 36) were received from the eleven district health officers in the thirty townships of the county. These officials also sent in 761 reports of disinfection (Form 37). All reports were carefully examined, and, if incomplete, they were returned to the proper health officer for more details before being entered on the records of this office.

Typhoid Fever: On February 15, I inspected three cases of typhoid fever in C. D.'s family in Ivyland Borough (no existing board of health), and one case of typhoid fever on premises of W. H. Y., in Southampton Township, the latter patient being the public school teacher in Ivyland Borough. Ivyland has an old history of typhoid infections. Nearly all the members of P. D. H.'s family have had typhoid fever during the past ten or twelve years. In the family of A. H. the source of several cases in the past six years has been traced, the householder himself having died from the disease on the premises about two years ago. Miss H. Y., one of the present patients, has been boarding in the A. H. household during each school week. Previous inspections have developed dry wells within thirty to forty feet of the water supply on the several premises in the portion of the borough facing the P. & R. Ry. tracks. On March 14, I inspected two cases of typhoid fever in the part of Morrisville Manor lying outside of the borough of Morrisville, Falls Township, with one death. C. P.'s wife is ill with the disease and G. W.'s wife has just died from it. An additional case of typhoid fever exists in the borough portion of Morrisville Manor. There does not seem to be any other source but the drinking water. Raw Delaware River water is piped into these homes for drinking and other purposes. There is no filtration of any kind, and the supply is pumped from the river below Trenton, N. J., and all drainage points above on both banks of the Delaware River. On April 12, following instructions from the Department, I made a special inspection of the typhoid fever situation in Morrisville Manor Park, Falls Township, with relation to the local water supply. During the year 1914 there were five cases of typhoid fever in Morrisville Borough, and during March, 1915, there was one case in Morrisville Borough (lower end), one in Morrisville Manor

Park (in former borough), and two in Manor Park (outside of the borough named), in Falls Township—one death in March. I made a personal visit to the pumping plant near the Delaware River above Morrisville. I found that all the water used in these homes is pumped into a huge standpipe above the borough and village, noted from the Delaware River above the Trenton Falls, and just opposite the city of Trenton, and is carried into the homes in its raw state; the supply in Morrisville Manor Park is from "dead ends." An effort was made about a month ago to flush these "dead ends." One of them could not be opened on account of the collection of filth in the pipe after a full hour's pumping. The water supply is frequently dark to black and thick with solid matter. On August 12, I made an inspection with Dr. John J. Ott of four cases of typhoid fever on the premises of E. H. at Applebachville, Haycock Township, and made a positive diagnosis. E. H., the local merchant, fell ill with typhoid fever about July 23d; had drunk water from a well on premises of H. L., about one mile distant in the same township where the householder was ill with the disease in May and June of the present year. Specimens of water from the H. L. well of water showed 180 bacteria and 9 B. Coli in the cubic centimeter. R. H. now has the disease, onset about August 3d, and P. H. and B. H. also have typhoid fever with onset on the same day—about August 9th. The latter are evidently secondary cases, infected from the first member in the H. family, for the patient occupied the room adjoining the kitchen with his wife, nursing and caring for the seven children. The mother who was nursing was not feeling well on the date of inspection. The disinfection of excreta was not properly done. September 17, I investigated an alleged case of typhoid fever on premises of G. H. S., wife of M., ill in Milford Township. The patient was on a chair in one of the down-stairs rooms, but she was too nervous in the absence of the attending physician to collect a specimen of blood for the Widal test. She had been ill for five weeks, bowels were constantly loose, but the householder did not know the range of fever during the course of the illness. Told me the attending physician made a diagnosis of "stomach and nervous breakdown;" eleven cows on the premises; milk and butter is retailed from the farm to the neighbors and in Coopersburg. The family of R. S. F. within a half mile distant buy all their milk from G. H. S.'s dairy farm and now R. S. F. has typhoid fever with an intense infection. September 19, I examined with Dr. W. S. E., the attending physician, a patient on the premises of G. K. in Milford Township and made a positive diagnosis of typhoid fever, an adult son, J., being ill. Blood specimen collected and a laboratory return received a few days later gave a positive Widal reaction. October 8, I examined an alleged case of typhoid fever on the premises of J. S., in Milford Township. A positive Widal report received a

few days later. I investigated the removal of J. S., son of C., from Milford Township to G. V. Hospital, and F. S.'s son E. from West Rockhill Township, both ill with typhoid fever, to the same hospital without permission.

October 11, inspected three cases of typhoid fever in Hilltown Township, adjoining Telford Borough; found B. L., R. L. and S. P., living in separate homes within a distance of half a mile, had all been drinking from W. H. L.'s well of water where the first case developed. This well of water would have been given special thought had I not found two cases of typhoid fever in Telford Borough (Bucks County), and six reported cases of the same disease in Telford Borough (Montgomery County)—both boroughs adjoining.

The three cases of typhoid fever in Hilltown Township receive milk from H. K., living outside of Telford in Montgomery County. I held a conference with the members of the board of health of Telford and interviewed H. K. at his home. H. K. admitted that he supplies milk to all but about two families in Telford, where typhoid fever recently existed, and further admitted that he exchanges milk with J. G., the other retail dealer in the neighborhood. H. K. told me there was a case of typhoid fever in J. S.'s household about a year ago. H. K. receives most of his milk supply from J. S.'s premises on dairy farm. I referred the matter to the Engineering Division of the Department for further investigation, since the source is apparently in Montgomery County—Telford Borough having had about a dozen cases of the disease a year ago.

October 13, I inspected ten cases of typhoid fever in the village of Applebachville, Haycock Township. During August four secondary cases had developed in E. H.'s family because of careless nursing. The sixth case in the village is one not easily understood; the patient A. McC., proprietor of the second general store in Applebachville, has died from typhoid fever. The source of this case cannot be learned unless the patient had used a vessel or handled one from the infected H. house, the children having come to his place of business for the usual supply of molasses, oil, etc. A. McC. was fond of stroking his moustache frequently. E. H. had very little stock in his store and his family bought nearly everything they needed in their home from A. McC.'s store. C. M., son of the hotelkeeper, has a very low range of fever and the source of it cannot be learned. The last two patients, M. L. and S. D., are neighbors to the E. H. family, and it is known that they are closely associated with members of the latter household. Laboratory reports showed eight wells of water in Applebachville infected with the B. Coli, and I gave careful instructions relative to cleaning and disinfecting these water supplies. I also demonstrated to H. S. K. that all the drainage at his well of water passed back into the well through a broken part of the terra cotta pipe; the

laboratory report showed 315 B. Coli to the cubic centimeter for a specimen taken from this well. Three of the wells of water are now placarded with a "Dangerous" sign, since they are of a semi-public character. All water used in the village was directed to be boiled for a period of thirty minutes as early as the 13th of September. The last case of typhoid fever was reported to the health officer on the 5th of October with onset on September 27th, and I feel that the outbreak of the disease is well under control. During the year I inspected nineteen dairy farms when typhoid fever existed on the premises and ordered such regulations as were necessary in each instance to safeguard the public.

Diphtheria: On January 27, I inspected a case of diptheria on premises of J. B., in Newton Township, and gave strict orders to the householder who has taken up residence at Nicholas—an Italian boarding house about a quarter of a mile distant—that if he enters the placarded house absolute quarantine will be established. While in a room in the J. B. house I saw four bottles of milk on the table and ordered that the bottles when empty be boiled thoroughly and destroyed, and notified the health officer to inform the local milk dealer that the practice of leaving milk in bottles at a house under quarantine for diphtheria, etc., must stop immediately under penalty. Diphtheria existed in the Italian row in Newton Township about one year ago, when a history of tonsillitis in a number of families was given by a physician, while several families had a few cases of reported diphtheria with one death, the last being malignant in type. February 25, inspected four cases of diphtheria among the pupils of Penn Valley school, in Falls Township. It is possible that R. N. contracted the disease while visiting in Trenton, N. J., bringing the contagion into the schoolroom. L. W. was the next child infected, while the two additional children in the W. family were secondary cases. November 25, I examined seven alleged cases of diphtheria among the pupils of Kratz's school, in Hilltown Township, and collected throat swabs for bacteriological study from three of the cases. Kratz's school was closed for thorough disinfection on account of six reported cases of diphtheria in the district. A source could not be learned. During the year inspected ten dairy farms when diphtheria was reported to exist on the premises; effective regulations were established in each instance.

Scarlet Fever: January 30, I inspected five cases of scarlet fever in the families of L. F. W. and F. S., pupils of Fretz school, in Hilltown Township. Three of the cases in the L. F. W. family were possibly due to the contagion in the home, but the first case in the household and the case in the F. S. family where L. K. was ill with scarlet fever were doubtless due to a common cause in the schoolroom. In this connection, on making an investigation in the home of W. B., I

found that the daughter, a school child at Fretz' was absent from the schoolroom for a period of ten days beginning December 28, 1914, and, although I could not make a diagnosis at so late a day, the history leads me to believe she was recently a victim of scarlet fever; her parents were suspicious of it and fought through the illness without calling in a physician—a large dairy existing on the premises. I instructed the teacher of the Fretz school. The Fretz school was ordered disinfected, and I conferred with the Hilltown school board, which promised to keep the school closed for ten days, and use care in readmitting pupils when reopened. March 2, I examined five alleged cases of scarlet fever in the family of R. W., Jr., and in S.'s household in Buckingham Township. Four of the R. W. children had sore throats a few weeks earlier, but I could not make a positive diagnosis during my late visit. The mother acknowledged that the children became suddenly ill with vomiting, high fever, etc., but she had employed no physician and sent them back to school in due time without any regulation, so that the R. W. children were possibly the source of four recognized cases of scarlet fever in the families of H. G. and J. W., pupils of Hickory Grove school, in Buckingham Township.

December 12, following the receipt of a request from Dr. R. C. Magill, I examined a boy, H. F., on the premises of D. F. F., in Solebury Township, and made a positive diagnosis of malignant scarlet fever. The householder had gone to a neighbor's house for milk and the only persons in the D. F. F. home were the patient and two tramp cornhuskers. I had the health officer place the premises under absolute quarantine, and held the tramp cornhuskers until the health officer could disinfect their clothing and guide them in taking a disinfecting bath in the morning; a guard was employed and an Order of Relief served on the Solebury Township officers under the Special Act for Bucks County, covering the employment of a nurse, etc. D. F. F.'s wife died about a year ago, and M. F., aged sixteen years, daughter of D. F. F., had left the premises with Anna, three years old, and were located by the Philadelphia Bureau of Health at 733 Holley Street. The older girl had a sore throat when she went to Philadelphia two weeks earlier. Information was wired to the Philadelphia Bureau of Health, and Dr. Cairns, Chief Medical Inspector of that Bureau, later reported that Anna was in the Municipal Hospital, Philadelphia, ill with scarlet fever.

December 15, I examined two children on premises of R. E. S., in Solebury Township, who had been brought to Carversville just before their home in Philadelphia was put under quarantine for scarlet fever. These contacts will be kept in the R. E. S. house in Solebury Township under observation for a period of ten days. I held a conference with the Solebury Township school board relative to the

safety of the residents' families in Carversville, and have secured the promise that both the Carversville and the Chestnut Grove schools nearby will be closed for a period of two full weeks following disinfection on account of the epidemic of measles and the case of malignant scarlet fever and scarlet fever contacts from Philadelphia.

During the year eight dairy farms were inspected when scarlet fever was reported to exist on premises. Effective regulations were established on each dairy farm.

Measles: During February I made a positive diagnosis of twenty-one cases of measles among the pupils of Centre school, in Bedminster Township, and found one case of measles in Myer's school in the same township. During March I made a positive diagnosis of fifteen cases of measles among the pupils of Three Mile Run, Lessig's, Sunny Side and Steeley's schools, in East Rockhill Township; seven additional cases were later inspected in the Sunny Side school, same township; and I made a positive diagnosis of five cases of measles in the Independent school, New Britain and Hilltown Townships. In April examined 207 alleged cases of measles among the pupils of Blooming Glen schools and Blue school, Hilltown Township; Newville school, New Britain Township; Independent school, in Hilltown and New Britain Townships; Plumsteadville school, in Plumstead Township; Gardenville school, in Plumstead Township, and Modern Presbyterian school, in Bedminster Township. A widespread epidemic of measles existed in April and until the close of the public school term throughout Hilltown Township and New Britain Township, due to carelessness on the part of the local authorities. A three-day Parent Meeting was held in the Blooming Glen school building, in Hilltown Township, on March 27th, attended by children from nearly all parts of Hilltown Township and the upper portion of New Britain Township. An early recognition and prompt action on the part of the local health officer living in the same town should have helped to control the extensive spread of the disease.

During the month of May I examined fifty-eight alleged cases of measles among the pupils of New Britain, Newville and Northern schools, in New Britain Township; Rocky Ridge school, in Richland Township; Edge Hill school, in Lower Makefield Townshiup, and Branch Valley school, in West Rockhill Township. During June I examined fifty-seven alleged cases of measles in New Britain, East Rockhill, Bedminster, East Rockhill and Northampton Townships; and Upper Black Eddy, in Bridgeton Township. In July forty alleged cases of measles were examined in the Three Mile Run school district, in East Rockhill Township; Groveland school district, in Northampton Township; Delaware school district, in Bristol Township; and Andalusia and Cornwells school district, in Bensalem Township. On August 5, I found four cases of measles in the Pine

Grove school district, in Lower Makefield Township. August 8, I found four cases of measles in the Cornwells school district, in Bensalem Township. September 15, I made a positive diagnosis of four cases of measles in Solebury Township, and on September 22, reported three additional cases of the disease in the same township.

During October I examined fifty-one alleged cases of measles among the pupils of the Deep Run, Union and Piperville schools, in Bedminster Township, and among the Pine Grove school pupils, in Lower Makefield Township. One hundred and four alleged cases of measles were examined among the pupils of the Green Hill and Carversville schools, in Solebury Township, Western Brick school, in Plumstead Township, and Pipersville school, in Bedminster Township. Measles, with Trenton, N. J., as a possible source, were found in Lumberville in August, and since then has gone through Green Hill school, in Solebury Township. At present about thirty-eight to forty children are under quarantine for the disease in Carversville, Solebury Township. November 30, I conferred with the officers of a local Chautauqua, to be held in Carversville December 2, 3 and 4, and a representative from the Chautauqua Association of Swarthmore, relative to the control of the epidemic of measles, and exacted a promise from the officers that a committee be appointed at once who shall be instructed to stand at the doors of the Carversville Hall and refuse admittance during the sessions to all persons infected and all children from homes under quarantine for measles. A list of all homes under quarantine was furnished to the president of the local organization. Seventy alleged cases of measles were examined in December among the pupils of Tyro Hall and Friendship school, in Buckingham Township, Warrington and County Line schools, in Warrington Township, Smith Corner and Prospect Corner schools, in Plumstead Township, and the Carversville school, in Solebury Township.

Chicken Pox: During January I found nine cases of chicken pox among the pupils of Silver Lake school, in Newtown Township, and nine cases of the same disease among the pupils of Point Pleasant school, in Tinicum Township. In February I made a positive diagnosis of nine cases of chicken pox among the pupils of the Street Road school, in Warrington Township, and of three cases among the pupils of the Bridge Point school, in Doylestown Township. March 14 and 20, I saw thirteen cases of chicken pox among the pupils of the Creek, Penn Manor and Penn Valley schools, in Falls Township. May 19, I made a positive diagnosis of five cases of chicken pox among the pupils of Centre school, in Bedminster Township. May 22, I saw five cases of chicken pox in the Fallsington schools, in Falls Township. During June I examined ten alleged cases of chicken pox in the Fallsington school district, in Falls Township, and made a positive diagnosis of each of the ten cases.

Mumps: March 31, I examined eight alleged cases of mumps among the pupils of Andalusia school, in Bensalem Township, and made a positive diagnosis of eight cases. July 29, I found one positive case of mumps in the Cornwells school district, in Bensalem Township.

Whooping Cough: November 20, I visited the premises of E. H. S. in Southampton Township, where the householder had refused to permit the health officer to placard for whooping cough, although he had signed a Form 34, stating he would not permit it unless a physician made the diagnosis, and he would not employ one. I made a physical examination with a positive result, since the child had a typical paroxysm of coughing during the visit. The premises were placarded by the health officer before leaving the village of Southampton.

Statistical Summary of the Year.

Examined cases alleged to be:—		Dairies inspected for:—	
Typhoid fever,	6	Typhoid fever,	19
Diphtheria,	11	Diphtheria,	10
Scarlet fever,	13	Scarlet fever,	8
Measles,	679		
Chicken pox,	78		
Mumps,	9		
Whooping cough,	1		

Sale of milk stopped on 21 premises.

Eighty-two schools ordered closed for disinfection on account of scarlet fever, diphtheria, measles, chicken pox, mumps and whooping cough.

One health officer instructed at office, ten elsewhere.

Your county medical inspector has been consulted during the year by boards of health and school boards, teachers, business men, civic clubs, welfare organizations and many citizens with helpful and gratifying results; preventive medicine concerning child life is being appreciated, and measures with this end in view are frequently demanded by our people.

BUTLER COUNTY.

Dr. H. D. Hockenberry, C. M. I.

In the work of the Health Department for the past year in Butler County the C. M. I. offers the following report:

Diphtheria: Of communicable diseases diphtheria in numbers stands at the head, with a showing of eighty-seven cases. Of these, thirty-eight cases were in the mining regions of Venango and Washington Townships and twenty-one cases in Butler Township in the suburbs of Butler Borough. In both sections the foreign element predominates and sanitary conditions are quite bad. Thanks to the use of antitoxin there were few fatalities and the majority of cases ran a very mild course. The only personal work done by the C. M. I. was a visit of inspection made March 6, to the village of Goff in the mining district of Venango Township.

Scarlet Fever: The report of scarlet fever cases from the county has a total of sixty-three cases. Of these, twenty-one were from the suburbs of Butler Borough. A visit of inspection was made by the C. M. I. to Muddy Creek Township by reason of an outbreak of scarlet fever in that section. By prompt action on the part of the health officer the further spread of the disease was controlled. The cases of scarlet fever were mostly of a mild type.

Typhoid Fever: The number of cases of typhoid fever reported during the year 1915 totaled thirty-seven. Of these, seven cases were from the Butler district and seven from the Harrisville district. Sensational reports in the newspapers of the outbreak in the Butler district were found on investigation to be grossly exaggerated. The work of inspection on the part of the C. M. I. was as follows:—

A visit January 9, to the village of Claytonia, Clay Township, to decide a disputed case.

A visit of inspection to the borough of Petersville by order of the Chief Medical Inspector to determine the possible source of typhoid fever in a resident family of this borough. Inspection made September 10. Specimens from the several sources of water supply were taken and also excretions from three possible typhoid carriers. All gave a negative result.

On October 15, I visited the village of Argentine, Washington Township, to inspect a family having two cases of fever. I found the probable source of infection to be a spring from which this family obtained its water supply. The same day I visited two families in Center Township, the Butler district, which furnished four cases of typhoid fever. The probable source of these cases was an abandoned well along the Bessemer R. R., from which these patients, three of whom were section hands, had drunk water.

It is very gratifying to be able to report a falling off in the number of cases of typhoid fever. It was no uncommon thing for the C. M. I. in the early part of his practice to have as many cases yearly as he now reports for the entire county.

Other Communicable Diseases: Of the other communicable diseases the numbers are as follows:—

Mumps,	6 cases	Cerebrospinal meningitis,	3 cases
Chicken pox,	31 cases	Infantile paralysis,	1 case
Whooping cough,	8 cases	Tuberculosis,	12 cases
Measles,	5 cases	Erysipelas,	2 cases
Pneumonia,	4 cases		

It is believed that few of the physicians report their cases of pneumonia, and hence the above report is likely but a small fraction of the true number of cases.

In this last list of communicable diseases no work of inspection was required.

CAMBRIA COUNTY.

Dr. W. E. Matthews, C. M. I.

The medical inspection work in Cambria County for the year 1915 has been rather extensive. Epidemics of different kinds occurred because of violation of quarantine regulations, etc. In some cases it was necessary to place watchmen on premises where quarantine laws were broken; and Sunday schools, public schools and all places of public amusement were closed until the diseases were abated and finally wiped out. Through the health officers and physicians I soon learned of any outbreaks or where people refused to be quarantined or have a physician. In these cases the health officers were instructed to visit the homes—in company with a physician— in order to establish a diagnosis. Houses were then quarantined and the laws enforced. While a few householders are antagonistic, the greater number evince a wiliingness to do anything possible to aid in preventing the spread of communicable diseases. Our health officers encounter a little difficulty among the foreign element, but as they become more familiar with our quarantine laws we find they are becoming more tractable and see the fallacy of their former actions.

Great progress has been made during the year in the general cleanliness in farm yards and improved conditions of houses and grounds. The county medical inspector is more frequently called upon for advice and information in sanitary matters, showing that interest is taken in the work of the Department.

Reports of communicable diseases received during the year are as follows:

Smallpox: A case developed at Allport Mines in January. Absolute quarantine was placed on the premises, and the health officer, Dr. Ealy, followed up all contacts. As Dr. Ealy had been through several smallpox epidemics, he was able to manage this case without the county medical inspector visiting Allport Mines.

In July a young man aged tweny-five of Ashville developed this disease. Seven contacts were vaccinated and absolute quarantine established.

Typhoid Fever: Seventy-six cases were reported during the year, outbreaks occurring in different townships. At Allport Mines, a little settlement of one hundred persons, mostly of foreign extraction, ten cases developed. All drank water from the same well. The well was ordered closed, prohibiting any one drinking from that supply, and the water obtained from other sources boiled. All patients were taken to the Spangler Hospital and but one other case developed. In Adams, Paint, Upper Yoder and West Taylor Townships cases

developed. The sale of milk was discontinued, premises cleaned up and disinfected, and the health officers frequently visited the premises to see that instructions were carried out.

Diphtheria: Three hundred and seventeen cases were reported. Schools were closed and fumigated and everything possible was done to stamp out the disease.

Scarlet Fever: There were a hundred and twenty-three cases of this disease reported. In some cases where the situation seemed alarming, it was found necessary to place guards until the epidemic was abated. Schools were ordered closed and all necessary precautions taken.

Measles: A hundred and fifty-eight cases were reported. So rapidly did this disease spread that schools were ordered closed and fumigated and it was necessary for me to aid the health officers to enforce quarantine regulations.

Whooping Cough: There were fifty-eight cases of whooping cough reported. This disease became very prevalent in the schools and it took considerable time to abate it, but we finally succeeded in doing so. We are gradually educating the people to the fact that these communicable diseases are unnecessary.

Mumps: We had eighty-seven cases of this disease reported. It is very difficult to convince people that mumps is a serious disease and should certainly be quarantined and prevented from spreading.

Chicken Pox: We had sixty-nine cases reported. There were a number not reported, no physician having been called. I instructed the health officer to make a visit to these homes accompanied by a physician, in order to establish a diagnosis, placard all the houses where the disease existed, and watch that the children did not go to school before the expiration of the quarantine period.

Statistical Summary of Work Performed During the Year.

Forms No. 37 received, ...	890	Cases examined alleged to be:—	
Forms No. 36 received, ...	801	Typhoid fever, ...	76
		Diphtheria, ...	317
		Scarlet fever, ...	123
		Chicken pox, ...	69
		Whooping cough, ...	58
		Measles, ...	158
		Mumps, ...	87
		Smallpox, ...	2

CAMERON COUNTY.

Dr. H. S. Falk, C. M. I.

During the first five months and the last month of 1915 no communicable diseases were reported to health officers, and as only twenty-two cases were reported during the other six months, it shows that Cameron County was in an exceptionally healthy condition, not-

withstanding the fact that nearly two thousand more men are employed in Shippen Township than in the preceding year, and many of these have brought their families with them.

Only one inspection was made, and that was to check up four cases of measles in the family of W. B. in Shippen Township.

Statistical Summary for the Year.

Forms Received.		Cases Reported.	
Form 34,	4	Measles,	5
Form 36,	22	Scarlet fever,	9
Form 37,	14	Whooping cough,	6
		Diphtheria,	1
		Chicken pox,	1

No typhoid fever was reported to me during the year.

CARBON COUNTY.

Dr. Edward G. Bray, C. M. I.

Carbon County had the usual number of cases of acute infectious diseases of childhood during the past year.

Scarlet Fever was epidemic the first three months of the year in Franklin Township, and in Weissport and Lehighton Boroughs. The fever got beyond control of the health authorities because certain physicians did not report their cases. It was only after these physicians narrowly escaped prosecution that the law was obeyed and the disease checked. The vigorous measures instituted by the State health authorities at this time have caused all physicians throughout the county since then to use more care in reporting cases of contagious diseases.

Typhoid Fever: Carbon County had about the same number of cases of typhoid fever this year as last and they occurred in the same townships as in previous years. There were seven cases in Mahoning Township, one in Franklin Township, and one in Lower Towamensing Township. The western part of the county is practically free from the diesase and it is too bad that a preventable disease should remain the yearly curse of the eastern townships of the county.

Conditions Requiring Special Work by the C. M. I.: January 15. A notice was received from the residents of Chrismans, Penn Forest Township, that the school children in that vicinity were suffering with a contagious disease and no physician was in attendance. The matter was investigated and the disease diagnosed as chicken pox. Proper quarantine regulations were established and the disease soon disappeared.

February 5. Complaints by citizens of Lehighton to the State Department of Health of inefficient and careless health work by the borough health authorities were investigated. Scarlet fever was found to be quite prevalent, resulting in the death of two adults. A can-

vass of those having had the disease showed that errors in diagnosis by the physicians and some mild cases with no physician in charge were the principal causes of the spread of the disease over the town. The fact that the borough health officer on account of anticipating removal from office had failed efficiently to enforce quarantine rules also caused the disease to spread. The board of health realizing the seriousness of the charges against them became very active and soon had the disease stamped out.

February 19. A letter was received on this date from the Palmerton board of health, stating that a physician in Weissport had failed to quarantine a case of scarlet fever under his care with the result that the disease had spread to their borough. Investigation showed there were several cases of the disease in his care and unreported. After some trouble he came to realize the importance of reporting contagious diseases and since then has apparently obeyed the law.

February 26. On this date Dr. Balliet, of Lehighton, requested a consultation in order to establish the diagnosis of scarlet fever in an adult. The diagnosis was made and quarantine enforced.

March 9. At the request of Health Officer Dougherty, of Lower Towamensing Township, six cases of chicken pox without a physician in charge were visited with him and quarantined.

March 25. A complaint from Unionville, Penn Forest Township, of a contagious disease among the inhabitants was investigated. The disease proved to be chicken pox and no physician in attendance. Proper quarantine regulations were enforced and the disease soon disappeared.

May 14. At the request of Dr. Trexler, of Lehighton, he was met in consultation to determine the diagnosis of a case of scarlet fever. The diagnosis was made and placards placed.

December 2. On this date a sanitary survey of the Weatherly Borough schools was made at the request of the State Health Department. The school directors of this town will not permit a medical inspection of the school children, but they could not prevent a sanitary survey of the school buildings. It was stated that probably next year a medical inspection of the children would be requested.

December 12. No reports of the health conditions in the boroughs of Bowmanstown, East Side and Weissport having been received by the State Department of Health for sevral months, an investigation was ordered as to the cause.

East Side and Weissport health authorities said they were unable to conduct the health work properly and they wished this work to be taken over by the State until such a time as they were able to attend to it according to law.

Bowmanstown had an organized board of health and said if they were instructed as to their duties they would attend to the work.

December 22. At the request of the New Jersey State Board of Health, an investigation was conducted among the customers of milk dealer Thomas Reed, of Lebanon, N. J., as to the prevalence of typhoid fever. The investigation revealed five cases of the disease, all caused by using his milk, as no other cases unaccounted for were present in the Mauch Chunks. The investigation was limited to those he served with milk in the boroughs of Mauch Chunk and East Mauch Chunk.

Summary for the Year.

Forms 36 received,	278
Forms 37 received,	225
Health officers instructed at office,	2
School survey (sanitary),	1

CENTRE COUNTY.

Dr. S. M. Huff, C. M. I.

The following annual report of Centre County is respectfully submitted:

During 1915 there were sixty-nine fewer cases reported than in 1914, and one more than in 1913. This has to deal with an area of eleven hundred and thirty square miles and a population of about thirty-three thousand, with eleven boroughs in this district making reports direct and not included in the thirty-three thousand population.

I found it necessary to visit two of the twenty-five townships during the year for the purpose of diagnosing suspected diseases of a reportable nature.

This office received during the year three hundred and seventy-seven reports of placaring and three hundred and forty-five of disinfection performed by the various health officers under our jurisdiction.

Chicken Pox: Seventeen cases from eight townships.

Erysipelas: One case, and this, as in the report of 1914, from Rush Township. I do not believe that this was the only case in the county, but it appears that the physicians of Rush make reports.

Impetigo Contagiosa: Seven cases from one township.

Measles: Two hundred and thirty-one cases scattered over seventeen townships.

Mumps: Three cases from two townships.

Pneumonia: One case reported. Certainly there were more in the county with the prevalence of grippe during the winter.

Scarlet Fever: Of this disease there were twenty-eight cases reported from ten townships.

Tuberculosis: Twelve cases from six townships.

Typhoid Fever: Reports were received of twenty-one cases from two townships.

Tetanus: One case reported.

Whooping Cough: Reports of six cases from five townships.

One township in the county seems, by the absence of any reports, to have been free from diseases of a reportable nature during the year.

The following table will give statistics for each health officer's district.

	Townships.	Diphtheria.	Erysipelas.	Measles.	Scarlet fever.	Tuberculosis.	Chicken pox.	Impetigo contagiosa.	Whooping cough.	Typhoid fever.	Mumps.	Pneumonia.	Tetanus.	Total.
316. S. M. Sankey.	Rush,	18	1	45	6	7	5	7	----	----	----	----	1	90
317. S. R. Pringle.	Taylor,	2	----	----	----	----	----	----	----	----	----	----	----	2
	Huston,	2	----	----	----	----	----	----	----	1	----	1	----	4
	Union,	----	----	2	----	----	----	----	----	----	1	----	----	3
	Worth,	1	----	----	----	----	----	----	----	----	----	----	----	1
318. I. J. Dreese.	Half Moon,	----	----	----	----	----	1	----	----	3	----	----	----	4
	College,	2	----	16	----	1	1	----	2	3	----	----	----	25
	Patton,	1	----	1	----	----	3	----	----	----	----	----	----	5
319. W. D. Port.	Ferguson,	----	----	60	----	1	3	----	----	7	2	----	----	73
	Harris,	----	----	19	1	----	----	----	----	1	----	----	----	21
320. G. M. Cooney.	Potter,	1	----	20	----	1	----	----	----	2	----	----	----	24
	Gregg,	2	----	7	----	----	----	----	----	1	----	----	----	10
321. J. D. Weaver.	Haines,	1	----	9	----	----	----	----	----	----	----	----	----	10
	Miles,	1	----	3	3	----	----	----	----	----	----	----	----	7
	Penn,	----	----	10	----	----	----	----	----	----	----	----	----	10
323. Homer E. Carr.	Benner,	2	----	6	8	----	----	----	----	----	----	----	----	16
	Spring,	7	----	----	4	----	----	----	1	1	----	----	----	13
	Boggs,	3	----	----	2	----	1	----	----	----	----	----	----	6
324. Dr. J. W. Kurtz.	Liberty,	1	----	2	----	1	----	----	----	1	----	----	----	5
	Howard,	2	----	2	1	----	----	----	----	----	----	----	----	5
	Walker,	3	----	11	1	----	1	----	1	----	----	----	----	17
	Curtin,	1	----	6	1	----	----	----	1	1	----	----	----	10
	Marion,	----	----	12	1	1	----	----	1	----	----	----	----	15
325. W. A. Sickle.	Snow Shoe,	9	----	----	----	----	2	----	----	----	----	----	----	11
	Burnside,	----	----	----	----	----	----	----	----	----	----	----	----	0
	Total,	59	1	231	28	12	17	7	6	21	3	1	1	387

Forms received: No. 36, 377. Forms Received: No. 37, 345.

CHESTER COUNTY.

Dr. Joseph Scattergood, C. M. I.

I take pleasure in submitting the following report of the work that I have done for the Department in Chester County for the year 1915:

There has been very much less sickness reported this year than usual; some of the diseases which have visited us other years not being reported at all. Of the population of approximately 58,000 persons coming under my jurisdiction, occupying an approximate area of 750 square miles, there were reported to me by the sixteen health officers 718 cases of communicable diseases on Forms 36, and there were 534 disinfections reported on Forms 37.

One health officer apparently either did not have time to do our work or else was indifferent, so that it was necessary to ask for his resignation. His successor seems to be a most capable man.

It was necessary in the performance of my duties to travel eighty-two miles by rail and six hundred and sixty-two miles by livery or auto. During the year I was called upon to investigate seven cases of chicken pox, thirty-two cases of typhoid fever, three of scarlet fever, two suspected smallpox cases, eleven of diphtheria, and six of mumps; also to inspect one dairy farm where a case of diphtheria existed.

The county was pretty well covered during the year with one form or another of sickness, but at no time was there anything of an epidemic form, except in West Goshen Township, where there were thirty cases of mumps reported. In Tredyffrin Township there were twenty-one cases of chicken pox. Of all the diseases, mumps led with two hundred and seventy cases reported. There were no cases of smallpox or meningitis reported. Two cases of anterior poliomyelitis and one case of opthalmia neonatorum were reported, but needed no attention from this office.

Chicken Pox: This disease was reported from thirty-seven townships, Tredyffrin leading with twenty-one cases. There were twelve cases from Charlestown Township, which adjoins Tredyffrin, and fourteen from East Vincent Township. These three townships being contiguous to each other, it is probable the disease was carried by persons who did not observe the quarantine as carefully as they should have done.

Diphtheria: Dihptheria was reported from twenty-eight townships, the greatest number of cases from Highland Township, where there was a small epidemic in the village of Gum Tree, ten cases occurring in this immediate neighborhood.

Erysipelas: Seven cases of erysipelas were reported, but needed no attention on my part.

Measles: There were eighty-seven cases of measles reported in the county during the year, the greatest number being twelve in Valley Township, which is immediately contiguous to Coatesville, with comparatively few fatalities. I believe the householders where no physician is employed are more particular to report this and other minor diseases than they were some years ago.

Mumps: Mumps leads the list with two hundred and seventy cases reported during the year, the greatest number being thirty-six from Caln Township, and thirty from West Goshen Township. These townships are immediately contiguous to Coatesville and West Chester, respectively, and the disease was probably carried to the county districts by children attending the public schools in the boroughs.

Pneumonia: Nine cases of pneumonia were reported, which by no means represents the total number of cases occurring in the county, but few physicians observing the Act of Assembly requiring this disease to be reported.

Scarlet Fever: Nineteen cases of this disease were reported throughout the year. I question very much whether that number represents the total number of cases occurring. Although our people have a wholesome fear of this disease, I am of the opinion, however, that many cases of a mild form have either been unrecognized or unreported.

Tetanus: No cases of tetanus or meningitis or smallpox were reported.

Tuberculosis: But four cases of tuberculosis were reported, which also is far below the number of cases existing. Many of these cases were treated at our dispensaries and probably may have been reported to the borough local health authorities.

Typhoid Fever: Fifty-eight cases of typhoid fever were reported during the year, but at no time or place could it be said to have been epidemic. Six cases occurred in West Goshen Township, four of them in one family, which was the nearest to an epidemic that we had. I believe our people are very much more careful in the promiscuous use of drinking water, and also a number of pollutions along our public streams have been cleaned up by the Engineering Division, so that outside of the boroughs we have had really very little typhoid.

Whooping Cough: Seventy-one cases occurred during the year and were evenly distributed in townships contiguous to our large boroughs, showing the influence which a thickly settled community unquestionably has in the conveyance of contagious disease throughout our rural districts.

There has been a very much closer cooperation between the public and the health authorities than for any time since the Department has been created. A desire seems to exist now to help rather than to obstruct our work, which is very gatifying.

The health officers have been prompt and courteous in the performance of their duties, and I have had no complaints whatever of any of them, which is also very gratifying.

It is pleasing to recall a number of instances where the physicians and the school directors of various communities have sought my advice or suggestions regarding health matters. I believe the Department work is thoroughly appreciated.

Statistical summary of work done during the year:

Cases examined alleged to be:—

Chicken pox,	7	Scarlet fever,	3
Diphtheria,	11	Smallpox,	2
Mumps,	6	Typhoid fever,	32

One dairy farm inspected for diphtheria.
Six schools closed because of epidemics existing in their neighborhood.

I wish again to express my appreciation of the courtesy and assistance given me by the heads of the Department whenever I have had occasion to consult them.

CLARION COUNTY.

Dr. F. P. Phillips, C. M. I.

Clarion County has an area of five hundred seventy-two square miles, containing twelve boroughs and twenty-two townships. Clarion is the largest borough, with a population of 2,612 according to the last census taken in 1910. The other boroughs contain 7,415 and the townships 26,611, making the population 36,638 over the entire county.

During the year forty-six persons alleged to be suffering from communicable diseases were examined for the purpose of establishing the diagnosis. It was necessary to travel 779 miles by livery and 144 miles by rail in order to make these examinations and to attend to other business pertaining to the office, visiting nine townships and two boroughs.

The sale of milk from one farm was restricted temporarily and eight schools were ordered closed and fumigated. We received a hundred and seventy-two reports of placarding for communicable diseases and a hundred and thirteen reports of disinfection. The largest amount was due to typhoid fever and measles.

Morbidity reports were confined to thirteen of the diseases which the laws of the State require the physician to report to health authorities.

Smallpox: On February 9, I was notified by a doctor of a case of suspected smallpox in Farmington Township. I investigated and found an extremely bad case. The disease had existed a week or so,

and owing to his business as a contractor he came in contact with a great many persons. I had all the places he visited fumigated and vaccinated all members of the household and all the contacts, vaccinating in all sixty-six persons. March 3, another case developed in the same household, a daughter, having only a slight attack. I had vaccinated her three times before vaccination was successful. Made twelve visits, but only had to quarantine these two cases and without a guard.

Chicken Pox: Nineteen cases of this disease were reported, being confined to three townships and in three months of the year, March, April and December. I personally visited six of these cases and confirmed the diagnosis and ordered one school closed and fumigated.

Typhoid Fever: There were fifty-nine cases of typhoid fever from ten townships reported during the seven months of the year, Red Bank Township leading with seventeen and Washington Township next with ten cases. A personal investigation of the conditions in Washington Township showed that the source of infection was in the municipal water, and I ordered all drinking water boiled before being used. In Elk Township I restricted the sale of milk at one farm on account of typhoid in the family.

Diphtheria: Seventeen cases of this disease were reported from seven townships during the year, Porter Township leading with eight cases. I was called to Washington Township to see a case of suspected diphtheria, but the child died before I reached the place. From reports I know that the child died from this disease. I immediately immunized the rest of the family and all those who had been in contact with the child. I also investigated cases of this disease in Porter Township and found several which were not quarantined.

Whooping Cough: Twenty-four cases of this disease were reported from five townships, most of them occurring during November and December. I made an investigation in Strattonville borough school after receiving complaint that whooping cough existed therein, but was unable to make a positive diagnosis.

Scarlet Fever: This disease appeared in seven townships during the year, making a total of twenty cases. Reports were received during seven months of the year. Personally visited a reported case in Farmington Township, but was unable to make a positive diagnosis.

Pneumonia: There was only one case of this disease reported during the year and that in Millcreek Township during the month of September.

Measles: Forty-four cases of measles were reported from nine townships, most of them occurring during the month of November. I made a personal investigation in Washington Township and confirmed the diagnosis in eight families.

Mumps: Mumps were reported from only two townships, one case during April and two in May. I personally visited a family in Monroe Township and confirmed the diagnosis in two cases.

Rabies: Only one case of rabies occurred during the year and that in the month of August in Washington Township, but required no action on the part of this office as the case was sent to the hospital.

Erysipelas: Only one case of erysipelas was reported during the year, developing in the month of January in Porter Township.

Tuberculosis: Thitreen cases of tuberculosis reported from four of the townships during six months of the year. This is six more cases than we had last year. Ten of the cases in 1915 were examined by myself and seven were admitted to the Sanatorium at Cresson. Most of these cases came from Madison and Toby Townships.

Impetigo Contagiosa: At the solicitation of the principal of the school in Strattonville Borough, I investigated a breaking out on three children and diagnosed impetigo contagiosa. These were the only cases reported during the year.

Statistical Summary of Work Done During the Year.

Forms No. 36 received,	172	Diphtheria,	4
Forms No. 37 received,	113	Typhoid fever,	4
Examined cases alleged to be:—		Measles,	8
Smallpox,	2	Whooping cough,	3
Scarlet fever,	2	Impetigo contagiosa,	3
Chicken pox,	18	Dairy farms inspected for:—	
Mumps,	2	Typhoid fever,	1

CLEARFIELD COUNTY.

Dr. S. C. Stewart C. M. I.

I beg to submit the following report of work done in Clearfield County in 1915:

During the year five hundred cases of contagious diseases were reported as against four hundred and thirty-three last year, as follows:

Measles,	142	Whooping cough,	13
Diphtheria,	86	Mumps,	45
Typhoid fever,	37	Tuberculosis,	23
Scarlet fever,	63	Pneumonia,	4
Chicken pox,	87		
		Total,	500

Four hundred and twenty-seven reports of placarding were sent in by the fourteen health officers and the same number of reports of disinfecting (Form 37) were received from the district health officers.

Diphtheria: This disease was prevalent throughout the county, eighty-six cases being reported from eighteen townships. On May 3rd I was called by Dr. R., requesting me to come to Janesville, in Gulich Township, and investigate an epidemic of sore throat. I

visited six families where the disease existed, took cultures from a case in each family, all of which proved to be positive and that the disease was a mild tracheal diphtheria. There had probably been thirty or more cases of diphthertic croup in this community before the disease was recognized. The health officer was instructed to quarantine all premises where patients had recovered until the legal quarantine period had expired, as well as those where the disease still existed. On May 6th, at the request of Dr. W., I made an investigation in Boggs Township where two members of the T. family had died of croup and a third case had developed. I at once ordered the premises quarantined, administered 5,000 units of antitoxin to patient and 1,000 units to those who were not affected. On November 22nd, upon receipt of instructions from the Department, I investigated an outbreak of diphtheria in Sandy Township. I found that quarantine regulations were being properly established and observed, that the school room had been disinfected and the board was doing everything possible to control the epidemic.

Typhoid Fever: Thirty-seven cases were reported during the year from fourteen townships, a decrease of seven cases over last year when forty-four were reported. On August 31st I made an investigation of an outbreak at Bald Hill, in Girard Township, and found seven cases. Six of these persons had been drinking water from a contaminated surface stream which had shacks erected on its banks, the drainage from which entered the stream. The coal company at this place agreed to see that proper outhouses were erected for the shacks and ordered all the men in their employ to discontinue using the water from this stream. I also found a case at Surveyor, same township, the source of which could not be determined.

On September 11th I received a report from the Department that a case of typhoid fever was said to exist on the watershed of the water company at DuBois. Upon investigation it was found that the patient had symptoms indicative of typhoid fever, that all precautions concerning the disinfection of excreta had been carefully observed. At the end of ten days, however, the patient's temperature was normal, and it was the opinion of the attending physician that the case was not one of typhoid fever. On October 16th I made an investigation of typhoid fever in Bell Township. I found three cases being treated at their homes, two that had been taken to the DuBois Hospital, and two to the Punxsutawney Hospital. All of these persons had been using water from the spring at James Brown's. An outhouse and pigsty stood about seventy-five feet above the spring, so that surface drainage could enter the spring. I also made an investigation at the Newtonburg school in the same vicinity where the closets were found to be in a very unsanitary condition, and the spring from which the school gets its water was probably polluted by

surface drainage. I immediately reported conditions to the Department, so that the order could be given to the school board to have the matter rectified.

Chicken Pox: On November 2nd an investigation was made at the Winburne schools on account of an outbreak of chicken pox. I found six cases, and in a number of instances the children not ill with the disease were attending school while their homes were under quarantine. I called on the secretary of the school board and advised him that all children must be excluded from school during the legal quarantine period, and also instructed the health officer of the district to placard all infected houses not already placarded.

Scarlet Fever: On November 30th, upon receipt of a report from the health officer of Burnside Township of an outbreak of scarlet fever in the Shepherd school district, I made a thorough investigation. I found that twelve pupils had had the disease since the opening of school on September 7th. I ordered the school closed at once and instructed the teacher to require certificates of disinfection before readmitting any children who had the infection in their homes.

This disease was more or less prevalent throughout the county, sixty-three cases being reported from seventeen townships, Decatur and Burnside having the largest number of cases.

During the year I investigated the boards of health in the boroughs of Burnside, Chester Hill, Newburg, Wallaceton, Westover, La Jose, Troutville, New Washington and Glen Hope, in all of which it was found necessaray for the Department to take charge of the work until efficient boards of health were organized and equipped to do the work properly. I also called on the councils of the boroughs of Chester Hill, Brisbin and Grampian, warning them that unless their boards became active and sent the required reports to the Department promptly, we should have to take over the work. They all promised to do better in the future.

CLINTON COUNTY.

Dr. R. B. Watson, C. M. I.

I would respectfully submit the subjoined report for 1915.

The following diseases have been reported to me by the seven health officers of the nine townships of Clinton County:

Measles,	20	Scarlet fever,	7
Diphtheria,	20	Tuberculosis,	6
Typhoid,	3	Whooping cough,	4
Chicken pox,	4	Mumps,	6

The above were all the diseases reported, but am sorry to be forced to say that it does not represent all the cases of those diseases that have occurred during the year.

Mumps: In Logan Township an epidemic of mumps occurred in July and August. The majority did not employ a physician, and it was not until September when the schools opened that the cases were reported by the school teachers to the health officer, who then as far as he was able quarantined and placarded all the cases he could find, much against the wishes of parents. In one school in Logan Township there were twenty-nine scholars enrolled and twenty-seven present on the day the health officer made his visit to the school. When he asked how many had had the mumps before the school opened every one of the twenty-seven answered in the affirmative, and the teacher reported that the two absent pupils were absent because they had the disease at that time. By making an inspection of Logan Township and appointing Dr. Irvin O. Mohr my deputy, to look after the cases reported, we succeeded in locating all the cases and had them properly quarantined and placarded. So the number of cases of mumps that occurred was much greater than the number reported to the county medical inspector.

Diphtheria: We have had twenty cases of diphtheria reported. These cases were reported from various townships; two in Pine Creek, four in Woodward, one in Castanea, five in Noyes, six in Greene, seven in Bald Eagle. In all these townships most of them recovered by use of antitoxin. All were quarantined and placarded and all premises were disinfected with formaldehyde gas. Was called by Dr. G. O. Mervine, of Bitumen, November 9th, to come up and assist him in locating the diphtheria that had occurred among the miners at Bitumen. I found that all the cases were scholars of the Slav school. We closed the school for two weeks after a complete fumigation with formaldehyde gas, and no more cases developed. Of course, the cases were quarantined at their homes.

Typhoid Fever: We have had but three cases of typhoid fever during the year; and since we have had the present system of water supply for Lock Haven and several of the townships, the cases that do occur are imported. We had one case imported from West Virginia in Greene Township. His home was just on the banks of McElhattan Creek, the stream that supplies Lock Haven and some of our townships with water. I endeavored to have this patient removed to the Lock Haven Hospital but was unsuccessful, but I did succeed in getting the health authorities of Lock Haven to place guards around his home and they allowed nothing to come out of the house until it was disinfected and afterwards buried where it would be impossible to infect the stream. The patient recovered and after an examination of his blood, urine and stools, all with negative results, and after a complete disinfection of all his clothing and his house, the guards were removed and the quarantine lifted.

This is just one of the cases that shows what can be done by complete quarantine and thorough disinfection. Had this not been done there is no doubt but that the stream would have been contaminated and the ten or twelve thousand persons who use water from this source would have been jeopardized.

The physicians of the county have become more particular in reporting communicable diseases and the health officers of our county are more efficient. The only complaint I can make is the want of tact and discrimination in placarding contagious diseases in one or two instances, but after giving instructions have had very little trouble.

Forms 36 received,	98
Forms 37 received,	79
Forms 34 received,	34

COLUMBIA COUNTY.

Dr. S. B. Arment, C. M. I.

I have the honor of reporting the following summary of this county for the year 1915:

Like the previous year we have had no visitations of any contagious disease left over from the past, except small points of infection in different sections, but notwithstanding this we had reported to us a total of 382 different cases of contagious diseases, of which forty were in Franklin and Catawissa Townships.

38 were in Conyngham Township.
8 were in Jackson, Sugarloaf, Benton and Fishing Creek Townships.
33 were in Centre and Briar Creek Townships.
9 were in Pine, Madison and Greenwood Townships.
171 were in Montour, Hemlock, Scott, Mt. Pleasant and Orange Townships.
84 were in Locust, Cleveland and Roaring Creek Townships.

All were placarded and where no physician was in attendance your county medical inspector visited and diagnosed 153 of the above numbers, traveling 108 miles by railroad and 623 miles by livery, finding fifty-nine cases of measles, thirty-two cases of chicken pox, sixty cases of mumps and two cases were examined for scarlet fever.

In the county as a whole the different diseases were as follows in regard to the number of cases of each disease:

Erysipelas,	2	Diphtheria,	54
Mumps,	67	Scarlet fever,	9
Chicken pox,	84	Tuberculosis,	3
Measles,	169	Typhoid fever,	7
Whooping cough,	16		

I received 335 reports of disinfection for the above list of diseases.

I find the largest number of diphtheria cases each year in Conyngham Township; this year it reported thirty-three cases against twenty-one cases for the balance of the townships and ten more cases than were reported last year.

CRAWFORD COUNTY.

Dr. J. K. Roberts, C. M. I.

I am pleased to send you a general summary of the work done by the county medical inspector for this county during the year 1915.

Complete reports of special work done during the year were sent to your office at the time the work was done, and as no copies of these reports were kept in this office they cannot be reproduced in this summary.

Crawford County contains about a thousand square miles of territory and a population of about 62,600 and is divided into two cities, seventeen boroughs and thirty-four townships. These townships are divided into sixteen districts. In each district there is a health officer from whom this office received 207 reports of communicable disease. These officials also sent to this office reports of 194 disinfections.

In order properly to perform the duties of my office, it has been necessary to visit most of the townships at various times and to travel 939 miles by livery and 817 miles by rail. This mileage includes all the special work I have done at the request of the Department as C. M. I. during the year.

Of the reportable diseases only twelve were reported to this office during the year as follows:

Chicken pox,	23	Scarlet fever,	13
Diphtheria,	18	Typhoid fever,	30
Erysipelas,	3	Pulmonary tuberculosis,	18
Measles,	11	Whooping cough,	71
Mumps,	12	Variola,	4
Pneumonia,	3	Poliomyelitis,	2

I am pleased to note that we are doing more effective work each year. Physicians generally are giving more aid, and the citizens are showing more appreciation of the efforts that are being made in health matters in safeguarding the public health, making it much pleasanter than when the work was first begun which is fully appreciated by your representative.

Statistical Summary for the Year.

Forms 36 received,	207	Cases examined alleged to be:—	
Forms 37 received,	194	Chicken pox,	5
		Scarlet fever,	2
Dairy farms inspected for:—		Smallpox,	2
Diphtheria,	1	Diphtheria,	5
Scarlet fever,	2	Measles,	3
Typhoid fever,	13	Infantile paralysis,	1
Smallpox,	1	Inspection of quarantine (small-pox),	2
Syphilis (special),	1		

CUMBERLAND COUNTY.

Dr. Harvey B. Bashore, C. M. I.

Cumberland County has an area of 550 square miles, and is divided into twelve boroughs and eighteen townships. According to the census of 1910, the county has a population of 54,479. The boroughs contain about 27,000, leaving a township population of some 27,000, which is directly under the supervision of the county medical inspector.

During the year I visited every township and traveled 4,173 miles by rail and 747 miles by team. During the year I received 166 reports of communicable diseases and 121 reports of disinfection. Of the reportable diseases, I had to do with the following:

Chicken Pox: There were twenty-four cases reported by physicians and parents during the year. There is still considerable tendency on the part of parents to hide cases of this disease, although they usually keep them out of school.

Diphtheria: This disease appeared mostly in the townships, near the city, with a total of thirty-one cases. There was not at any time an appearance of an epidemic, only isolated cases cropping out from time to time. When a case of this disease appears in a school, your inspector makes it a rule to visit this school and examine the throats of all the children, eliminating, of course, any suspicious case. By this method, and the disinfection of the room, school work is not interfered with to any great extent.

Measles: During the year only eight cases were reported. There seems to be a growing tendency for parents to employ a physician for this disease.

Mumps: Only nine cases were reported during the year.

Scarlet Fever: Ten cases were reported during the entire year, most of them being in Hampden Township.

Typhoid Fever: Sixty-one cases of this disease were reported during the year. Many of these cases occurred in the vicinity of Shippensburg, which suffered from a severe epidemic in October and November. A certain number of our rural cases were traced directly to Shippensburg infection. In two houses, at least, there was very strong evidence of a "carrier." The Widal test is being more widely used by our physicians, and many mild cases formerly passed over are now reported.

Whooping Cough: Only three cases were reported in the county. I still feel certain that there are a considerable number of cases of this disease not seen by a doctor and, of course, not reported.

Dairy Farm Inspections: During the year I inspected twenty-eight dairy farms on account of the presence of scarlet fever, typhoid fever and diphtheria. On eight farms the sale of milk was prohibited, as

the owners were unable to take the precautionary measures required by the Department. On the remaining twenty farms arrangements were made for a neighbor to do the milking and marketing of the milk, and the sale was therefore permitted to continue.

OUTBREAKES OF TRANSMISSIBLE DISEASES INVESTIGATED.

Diphtheria: In October there was an outbreak of this disease in one of the Mt. Holly schools, several cases appearing among the pupils. The school was immediately closed and disinfected and the local health board required that every child in the school be given an immunizing dose of antitoxin before being readmitted to school. This was done without very much trouble, and, of course, the threatened epidemic immediately subsided.

Scarlet Fever: An outbreak of this disease appeared in St. John's school in Hampden Township. The cases were very mild and there may have been ten or twelve before it was recognized; then a severe case appeared. The school was closed and disinfected and all suspected cases investigated. Six or seven persons were found to have had recently or still to have the disease, and were quarantined the required time. The epidemic promptly disappeared.

Chicken Pox: There was an outbreak of chicken pox in Shepherdstown school in October. There were fourteen cases in all. The school room was disinfected. The health officer obtained a list of probable cases from the school teacher, and in each case the diagnosis was checked by your inspector and the cases quarantined.

DAUPHIN COUNTY.

Dr. C. R. Phillips, C. M. I.

Measles: There have been two epidemics of measles in the county during 1915. The first one in January centered around Red Hill school house in Middle Paxton Township and was caused by the carelessness of the parents of the children affected, the teacher in the school, and the physician who saw the cases. There were sixty-three cases in this epidemic. Thirteen cases (the first to be reported) were reported inside twenty-four hours. In many families no physician was called until all the children were affected. There were eighteen cases in four families, which shows how it swept through whole families.

The second epidemic broke out the latter part of December in Wiconisco and was giving evidence of assuming proportions equal to the first. This likewise was due to the carelessness and indifference of parents. Physicians were not called until several members of the family were affected. In many cases children were sent to school

with unreported cases of measles in the family, the children stating to the teacher that "sister (or brother) has a cold and can't come to school."

Diphtheria: In Williams Township there were twenty-three cases of diphtheria during October and November. An investigation seemed to reveal that cases of "sore throat" uncared for by physicians or not diagnosed as diphtheria, and therefore permitted to attend school for several days in such condition, caused the spread of the disease. Cultures from several of such cases showed the presence of the Klebs-Loeffler bacillus.

Typhoid Fever: There were forty-one cases of typhoid fever reported in the county during the year, but they were sporadic, having no common source of origin so far as could be determined. There were six cases of typhoid on milk farms during the year. In each case a careful investigation with census was made, quarantine established and arrangements for the handling of the milk and milking utensils were completed.

Chicken Pox, Mumps and Whooping Cough: Comparatively few cases of mumps and whooping cough were reported during the year and only seventy-six cases of chicken pox. It seems self-evident that through the carelessness of parents and physicians many of these diseases are not reported.

Summary for the Year.

Forms 36 received,	411	Mumps,	41
Forms 37 received,	399	Scarlet fever,	9
Chicken pox,	76	Typhoid fever,	41
Diphtheria,	95	Whooping cough,	17
Measles,	81	Pneumonia,	15

DELAWARE COUNTY.

Dr. Hiram M. Hiller, C. M. I.

County medical inspector's report for the year 1915.

There were two hundred and eighty-eight Forms 36 received during the year 1915. Measles (78), diphtheria (56), typhoid fever (27), whooping cough (35), mumps (41) and chicken pox (27) account for the majority of these reports. The carelessness of parents and the dereliction of duty on the part of teachers and school boards were responsible for most of these. None of the other diseases assumed the proportions of an epidemic, but were scattered here and there throughout the county.

Measles: There were seventy-eight cases of measles, largely due to two sources, Tinicum Township, with forty, and Upper Chichester Township with twenty-seven cases.

In a school in Upper Chichester Township, there were a good many mild cases in which there was no physician called, and there being no strict supervision on the part of either the teacher or school board, these children returned after a few days' absence and spread the infection. A considerable number of cases resulted.

There was also a small outbreak at the P. school, in Middletown Township, due to the same causes which operated in the T. W. school; by contrast, at the G. M. school, where eight hundred boys are in close daily contact, the superintendent, the doctor at the school, and our departmental officials cooperated, and soon ended the outbreak with a small number of cases.

Tinicum Township has always been very slack in reporting the minor cases, but fortunately there is an intelligent principal at the E. school, who rigidly excludes all suspicious cases, otherwise we should have a much worse report for this district.

Scarlet Fever: There were seven cases of scarlet fever reported to this office. We inspected some of the cases occurring in Marcus Hook, where there was a considerable outbreak, necessitating the closing of the schools, theatres and churches.

There was a case on one of the large dairy farms near Chester in the family of an employe who was engaged as a milkman. He was promptly removed from the quarantined premises and allowed to pursue his duties without any further accident occurring.

There were a few cases scattered over the country suspected of being scarlet fever which were parole-quarantined. In these cases there was either no fever nor angina, or slight fever with rash and no angina, but in one or two of these cases, the subsequent peeling made us feel that our extra precautions in all these cases were justified. Especially was this true of a case in which the initial symptoms suggested a drug rash, following the use of iodoform in a wound, but the fever and anginoid symptoms came later and the patient peeled in classical form.

At one of the large charitable institutions, where there are four hundred young adult pupils, there was one case of scarlet fever and some weeks later several simple rashes without associated symptoms. All were treated as scarlet fever, but owing to the doubt as to the genuineness of the diagnosis, carelessness ensued; later we saw and diagnosed two cases of undoubted scarlet fever among the pupils, but strict quarantine of these patients and the isolation of all contacts controlled the outbreak.

Diphtheria: There were fifty-six cases of diphtheria, forty of them coming from the Glen Mills schools.

The following is extracted from the letter of the Chief Medical Inspector, who visited the school. A similar outbreak of the same disease occurred here last year, which was controlled by isolating all possible carriers, especially among the handlers of food.

"They have about forty cases in the school. In only one case was there a distinct pseudo-membrane on the tonsils. There were a number of cases of sore throat that bacteriologically proved to be diphtheria.

"Of course, most of these patients have been ill for four or five days and have been given antitoxin. It is entirely possible that some of the forty cases were not diphtheria, but H. is culturing all cases and will be able to rule them out in the end.

"I am making arrangements to have H. take each family and try the Schick test on every member of the family and where it indicates the absence of antibodies to immediately immunize members of that family.

"By the time that work is completed in each family Doctor H. will arrange to have a complete sanitary cleaning of the entire half of the cottage, blankets and linen to be sent to the laundry, the boys' clothing to be disinfected with gas, cleaning of the rooms, washing of the beds as indicated in Form 18. In this way they would go rapidly through eight cottages with sixteen families.

"It is not entirely clear where the infection started. H. is making a culture of each boy admitted from the 8th of December, the time when the outbreak began. He is culturing members of the kitchen faculty and those connected with the dairy work with the thought that a carrier might be along the food route."

This arrangement effectually controlled the alarming outbreak at the Glen Mills school.

On September 16 we reported a very serious and unusual case.

"Yesterday at the request of Dr. K., of Nether Providence Township, we saw an interesting case of diphtheria. We felt pretty confident that he had a case of nasal, faucial, laryngeal, and bronchial diphtheria of a week's standing, but owing to the difficulty in obtaining cultures and the peculiar nature of the case, he asked me to see it with him. Clinically, I had no question in confirming the diagnosis, but we brought a swab to Dr. G. for an immediate examination and culture."

On the 21st we sent this further report on the case:

"You will be interested to know that this case of diphtheria in Upper Providence Township, seen with Dr. K. of S., was proven by culture and the prompt use of antitoxin prevented further disaster.

"Dr. K. reports this morning that the lung condition is clearing rapidly and there have been no further cases in this immediate family."

Typhoid Fever: Typhoid fever has always been one of our greatest diseases because our county is a dairy district, serving Philadelphia, Wilmington, and many small boroughs.

One case, on a dairy farm, unreported as they usually are for a week or more, can easily account for a small outbreak in several boroughs or a considerable epidemic in the cities before the medical inspector can take measures to stop the source of infection.

There were only twenty-two cases reported to the county medical inspector, nine of them occurring on the dairy farms. This, however, does not complete the list of cases under our observation, because the first class townships and boroughs were at times cooperating with us in eradicating the sources of infection.

The Philadelphia board reported the occurrence of nine cases on a milk route supplied by a dairyman in Darby Township. To this were added four more cases in the borough of Colwyn, served by this milkman, but as soon as rigid sanitary arrangements were instituted the outbreak ceased. Carelessness in cleansing his bottles, the presence of an overflowing cesspool in close proximity to the milk house, and general lack of care in handling the milk were the menaces which were remedied in this instance.

At Chadds Ford there were six cases with two deaths, directly traceable to a polluted well. There had never been any typhoid at this house before so far as could be ascertained, although the daughter of the owner had typhoid fever four years before, when they lived at another place.

The water for this family and for the next door neighbor, Mr. M., was derived from a well under the floor of the out-kitchen, and the watercloset, without a tight cesspool, was on the hillside some eight or ten feet above the level of the floor of this pump shed. There had been a surface thaw followed by heavy rains, so that surface drainage from the hillside could easily have washed from the cesspool into the well, and this was most likely the source of infection, as will be seen by the sequence of events.

A granddaughter living some miles away visited the house of Mr. J., but did not attend the sick man himself. She soon afterwards developed typhoid fever. Mr. J.'s son became infected and died of the disease. There were three other cases in the house of Mr. M. next door, one of whom was a visitor, but all of them used water from the J. well. We learned that this visitor subsequently died.

The suspected water contained B. Coli., but as it had been already condemned on our first visit, no new cases developed subsequent to this, allowing, of course, suitable incubation period for the cases that followed the first one.

It is needless to add that measures were taken to cleanse the well and to prevent a recurrence of its pollution.

The six cases occurring in Concord Township about the first of the year were of special interest because of their proximity to a very large creamery and the fact that the families of employes were among those having typhoid.

The following is an extract from our report made at that time:

"In early summer, two childrden of a colored woman by the name of S. died of intestinal trouble. Under date of September 19, 1914, we have a report of A. S., seven years old, being sent to the Chester Hospital before diagnosis of typhoid fever was made, but as we had no knowledge of this family living in proximity to the creamery, no inspection was made. The S.'s live in a little old house within fifty yards of the creamery, but over the dividing fence line, on Mr. S.'s place. They have an outside watercloset which is now full and it drains with each heavy rain into the nearby west branch of the Chester Creek."

This was case No. 1.

As near as we can get the facts, the second case to this neighborhood was Mrs. D., daughter of Mr. B., who works in the creamery and lives within two hundred feet of it. Mrs. D. was feeling more or less ill during a visit she paid to her father's house sometime in October, 1914. She returned to Lansdowne on November 5th, where she had typhoid fever and after her convalescence she again returned to her father's house at Concord. We eliminated the possibility of her being a case of Mr. B.'s route because she took her milk from Mr. F. and had in no way come in contact with any of the Lansdowne cases.

I. N. was the third case in this series and he also at times works in the creamery, although his position is that of a chauffeur for Mr. S.

The fourth case is B. O., who lives next door to Mrs. B. in Concordville. His father does not work in the creamery but is a railroad man. Now Mrs. D. visited the S. family and nursed those babies when they were sick and B. O. played back and forth daily between the B. home and his own, but I. N. in all probability never came in contact with the other three cases.

The colored family never took any milk until the children became sick, when a neighbor began serving it to them in bottles. He at the same time served I. N., Mr. O., Mr. D. and Mr. S. with morning milk, his evening milk going directly to the creamery. He used bottles and they had been entering all these infected homes, with the exception of that of Mr. S., who has his own can separate and apart. The usual washing and so-called scalding has been the method of cleansing the bottles. This to my mind would seem to be sufficient opportunity for this slow infection extending over a period of months, limited in every case to the people who were using his milk, except Mr. S. and another family by the name of H. These may have another source of infection in the use of polluted water, as will be shown a little later.

There is, however, a third probable source of infection to be considered, and that is the sewage disposal where dry wells and surface waterclosets are in use. This is particularly dangerous in this neighborhood for the reason that there are a good many springs on this hillside. There is a considerable stream of water running down the roadside within a few feet of the spring-house where Mr. O. obtains the drinking water, passing between the houses of Mr. B. and Mr. S., and emptying into Chester Creek, not far from the creamery.

It seemed specially advisable in view of the widespread use of the S. butter to make a sanitary survey to test the drinking water used by these various families as well as the water from Chester Creek and the wells of the creamery.

This suggestion was carried out by the Division of Sanitary Engineering and eleven of the twelve samples were found polluted,

Notices were also served on all persons having surface waterclosets and dry well cesspools, and the use of water for any purpose taken from Chester Creek was condemned as it was grossly polluted. These precautions ended the occurrence of typhoid at this place.

There were other localities where a single case would occur occasionally, and there were two cases in one family, in which we could not trace the source of the infection, and where the disease ended without further spread.

In an isolated bend of the Brandywine on the dairy farm of Mr. T., a mile away from any neighbor, where the drinking water was brought to the house in a pipe line from a spring a quarter of a mile away, with no history of typhoid on this farm or in this family, the son of Mr. T. was afflicted with this disease and at the same date a nephew who had recently visited the Brandywine farm fell ill of typhoid fever at his home in Montgomery County.

The boys had been to the Wellington Fair, had bathed in the Brandywine and visited Lenape Park, and the presumption seemed justifiable that they both had obtained their infection away from the place, but when, three months later, a second son of Mr. T. became ill and died of typhoid, the search for a cause had to be renewed.

On September 7 we sent the following report:

"We have report of a colored child, sick with typhoid fever, N. J. by name, residing on the B. farm. The B. farm, you will recall, as having already handed us two epidemics. We sent H. O. C. at once and find that these colored people are in no way connected with dairies.

"Dr. D. informed us that he had two suspicious cases in his neighborhood. Diagnosis was held until he could get a report on the blood test, and this morning H. O. C. reports that he has had information of a case of typhoid fever on a dairy farm near Elam, as yet not reported to us. We have sent him there to make inquiry. We will go in a few days to Bethel and Concord Townships to check up these typhoid fever reports.

"In the meantime Dr. B. reports to us that they are ready for the water analysis at Chadds Ford, the well at the J. place having been cleansed. If, therefore, your laboratories are in a position to take over this work now, let us have three containers, these points all being covered in previous correspondence."

On October 7 we sent the accompanying report:

"We visited the farm of Mr. H. E. J., in Upper Providence Township, to investigate the source of infection of L. P., now ill with typhoid fever at the Pennsylvania Hospital in Philadelphia. We do not feel at all satisfied with the results obtained from our investigation.

"This young lady was at the farm between five and six weeks and she was not in good health most of the time. She never left the farm until she was removed to the hospital. Y.'s house has modern plumbing throughout and the drains are connected to the well at the rear of the property which is cement covered. This overflows to a second well farther down the meadow. Both of these wells are dry-wall construction and they have been able to take care of themselves in the four years Mr. Y. has lived on the property.

"The water supply comes from the spring a quarter of a mile on the other side of the house, where the rising ground is between them.

"The dairy is on another part of the farm with separate springs, and the milk for family use alone comes to the house. There is no history of typhoid fever on this farm as far as we know.

"The main thing that puzzles us is the unlikelihood of her having been a case of walking typhoid fever for so long a period, without showing more evidence of illness.

"Mr. Y. is very willing to help us in any examinations we may require and will let us know if there be other cases of fever of any kind in his neighborhood. We happen to know that there was a case of typhoid fever, now convalescent, in person of Mr. J., who has a country place near Sycamore Mills in this same township, but Mr. J. was traveling about all the time, and, of course, had no idea where he obtained his infection."

There were several cases in Philadelphia and various boroughs, directly traceable to a polluted spring in Springfield Township which was used by a large force of workmen. Where the cause could be found so readily and the danger removed there was not so much anxiety, but the inexplicable recurrence of so-called sporadic cases in so many widely separated localities kept us very apprehensive lest a serious outbreak should occur.

Between August first and the end of November we had about forty cases reported to the Chester board of health. Some confusion and non-reporting was occasioned by out-of-town cases not being properly reported when they were sent to our hospitals. Our city board censused these cases carefully but was unable to find any common origin for them, and the year closed with occasional cases being reported.

On November 27 we wrote you:

"The typhoid fever situation is again a little complicated in Upper Chichester, and we are sending you this preliminary report and will work out the situation later.

"Dr. B. reported the case of J. C. and you have before you Dr. W.'s letter of November 16, and H. O. McC.'s letter of the 16th on this subject.

"Yesterday Mr. H. was sent from your Engineering Department to investigate the drainage, and he will probably make report to the Engineering Department. We wish you to send us a copy.

"We will go over these cases again to see if there can be any possible inter-communication. As we have told you before, this is our most dangerous neighborhood for Chester, as a large part of our milk supply comes from Boothwyn and neighborhood, but all our efforts in the past to find a common origin have been futile."

Again on December 6 we wrote:

"There is nothing particularly new to report on typhoid fever. Dr. E. had censused twenty-four (24) cases since the first of August, and was unable to come to any conclusion concerning them. We have obtained a list from the Chester Hospital and find that since the first of September, they have had twenty-eight cases, so that we feel that Dr. E.'s list is incomplete. We have asked our superintendent to send him a corrected list, and we will make whatever investigation we can as the epidemic progresses.

"We have had a talk with Mr. and Mrs. C. at Linwood Heights since we have had Mr. H.'s report on the water supply and must admit the situation is very complicated. Mrs. C. was M. G., one of the first cases of typhoid fever that we had anything to do with when we took over the work. There have been the following cases of typhoid fever in their own family, to wit:

"Mae G., August, 1910.

"Harry G., a cousin, at the nearby cross-roads, 1909.

"Mary G., his sister, 1911.

"Marian G., next door to M. G.

"Marian's mother had intermittent fever just preceding the child's illness.

"J. C., who was married to M. G., 1910, had typhoid fever in 1912.

"Between the G.'s and the cross-roads is the farm of S., where Mrs. M. had typhoid fever, giving us the B. milk infection and quite an epidemic in Chester.

"S. G. had typhoid fever next door to the G.'s at the cross-roads, in 1912.

"A few hundred yards down the road, Mr. W. had typhoid fever in 1913.

"Not far from J. C. is the home of Wm. P. who now has typhoid fever in Chester Hospital.

"The old church where H. L. was sick and the home of L. M., whose wife and child had typhoid fever, are less than half a mile from the cross-roads, making thirteen cases of which we have had report since 1909.

"It is inconceivable that sub-soil drainage could be responsible for this in every case, especially as the M.'s lived across Naaman's Creek from the other homes. We have been unable to establish any inter-communication, or any common source of supplies. Across the road to the westward from Boothwyn brings us to the dairy farms of B. McC. and T. These certainly have different drainage and different food supplies. Nor have I been able to get any trace of a 'carrier.'"

On October 25 we made this report:

"On Saturday we went to the dairy farm of J. T., Upper Chichester Township, to inspect the dairy for typhoid fever. Two of his children have the disease.

"We have no way of finding out how these cases have occurred. The most singular fact in connection with it is that this man lives half a mile due west of C. B., and between these two farms is located the residence of Mr. J., whose boy recently had typhoid fever, and so far as we can determine neither the J. boy nor these two children of Mr. T.'s have in any way come in contact with either the B. family nor each other. There is no ice cream vendor, there have been no Sunday school festivals, and there have been no cooks or farm hands going from one place to another. So far as we know there have been no such raw foods as watercress or garden vegetables used, nor has there been any bathing in the streams.

"Mr. T. feels that the water at the school is offensive and may be the cause, but the J. boy had typhoid fever before school opened. Will you send us three containers to H. O. C. at Boothwyn Station, instructing him to take samples from the T. spring and well at the barn, and also the water which is used at the Middletown school No. 3, which we understand is being carried from a neighbor's house."

This is a preventable disease, but it is not necessarily easily traceable until it has marked one or more victims. It is often a simple matter to find the source of infection when there are a score of cases to help us find a common origin, but not so simple when but one or two cases occur under circumstances that negative the ordinary sources of typhoid infection; and when these cases keep recurring year after year in our most important dairy district, with its possibilities for milk epidemics always before us, it is a constant source of anxiety for the medical inspector.

Summary for the Year 1915.

Typhoid fever,	22	Chicken pox,	27
Diphtheria,	56	Scabies,	7
Scarlet fever,	7	Whooping cough,	35
Measles,	78	Meningitis,	1
Erysipelas,	7	Tetanus,	1
Mumps,	41	Pulmonary tuberculosis,	6
Forms 36 received,			288
Forms 37 received,			163
Dairy farms inspected for:—			
Typhoid fever,	9	Scarlet fever,	1
Diphtheria,	1	Measles,	4

ELK COUNTY.

Dr. J. G. Flynn, C. M. I.

This county has been very fortunate during the past year as regards epidemics of any kind. I was compelled to close only one school during the year and that was for diphtheria.

Scarlet Fever: This disease has been present in the county in isolated cases nearly all the time, probably the remnants from epidemics we had during the previous year.

Typhoid Fever: During the late fall and early winter we were threatened with typhoid fever epidemics in our three boroughs and inspectors came on from Harrisburg, but fortunately all three outbreaks were aborted. The one in Ridgway was probably due to using unfiltered water during a period in which the pumping station was being repaired.

Forms 36 received,	40
Forms 37 received,	57

ERIE COUNTY.

Dr. J. W. Wright, C. M. I.

I have the honor to submit the following report of my work as county medical inspector for Erie County for the year 1915:

Erie County has an area of 772 miles, of which about 750 are rural. There are two third-class cities with a population of about eighty-five thousand inhabitants, fifteen boroughs with approximately fifteen thousand people living therein, and a rural population of about thirty thousand, which is divided among twenty-one townships.

Active boards of health are existent in both of the cities and in five of the fifteen boroughs. In five of the other boroughs the township health officer for the district in which this community belongs acts as borough health officer. A similar arrangement should be made in several of the other boroughs, it having been our experience

that a much higher degree of efficiency is obtained by this method than by the common plan of trying to organize boards of health which are unwilling to serve owing to the fact that money is never appropriated for their use, either for the purpose of employing an active secretary or securing the services of a health officer who will faithfully perform his duty.

The township health officer, on the other hand, works under State authority, and is not subject to the criticisms and annoyances that attend the enforcement of regulations which are more or less distasteful to the individual, who also looks upon such as an infringement of his constitutional right to do as he pleases regardless of the comfort of the people.

Communicable diseases to the number of three hundred and seventy-eight were brought to my attention. Of these, one was reported from the city of Corry, eighty-seven from eight boroughs, and the remainder from twenty of the twenty-one townships in the county, only one of which was free from any form of contagion. These diseases may be taken up under their respective headings as follows:

Smallpox: Of this disease twelve cases were brought to my attention. One was in the city of Corry in January, in the person of a railroad mail clerk, who contracted the disease at some unknown point along his run. The case was at first diagnosed as grippe, but on the appearance of the rash the suspicion of the attending physician was aroused and I was requested to make a definite diagnosis. The case was at once quarantined, and all mail clerks and other railroad employes coming in contact with the patient were vaccinated, as were members of the family. The car was thoroughly fumigated and no cases developed from exposure. It is interesting to note, in this case, that the patient had never been vaccinated. In March smallpox appeared in the borough of Union City, a total of eleven cases developing. The disease, however, was finally stamped out. Some trouble was experienced in this community owing to the general deep rooted sentiment against vaccination. After some argument, however, the board of education was induced to enforce the vaccination law. As a result many children remained out of school, and, I am sorry to say, probably escaped vaccination, as on the disappearance of the outbreak the school authorities again permitted them to attend school without complying with the requirements on this subject. One of the victims of the disease, in this place, was a postoffice clerk. Here, too, some opposition was met with before vaccination of the other employes could be accomplished. They were, however, successfully vaccinated and no serious results followed. In this connection, it may be worth while to mention that one case of smallpox occurred in the city of Erie, developing early in January from a series of cases occurring in the preceding December, 1914. These, too, were among unvaccinated persons, all closely connected by family ties.

Chicken Pox: While generally prevalent throughout the county, this disease reached an epidemic form in but very few communities. Fifty cases of this disease were reported from ten townships, and thirty-eight cases developed in four boroughs, the greatest number being in Union City, where twenty-four cases were noted. In addition to this, the disease was generally prevalent throughout the whole year in the city of Erie. A few cases were also stated to have occurred in Corry. Nearly all were among small children, and the type of the disease, history, etc., made their diagnosis comparatively easy. Few cases developed among adults, in each of whom there was distinct evidence of previous successful vaccination. In one case, smallpox had occurred several years before.

Mumps: Eighty-five cases of mumps were reported, one from the borough of Elgin, and eighty-four from eleven townships. As is usual this disease occurred among people closely associated in their work or otherwise. This disease was also moderately prevalent in the city of Erie. No fatalities occurred.

Measles: Thirty-eight cases of this disease were reported in eight townships by the township health officer. This disease was also slightly prevalent in Erie; only one death was reported, however, in the whole county, that occurring in the city of Erie.

Scarlet Fever: This disease existed to a moderate degree in nine townships, nearly one-half being in Millcreek Township, just outside the limits of the city of Erie. This disease was also moderately prevalent in the city of Erie, eighty-nine cases occurring therein with no fatalities.

Diphtheria: This disease occurred in nine townships, twenty-two cases being reported. One hundred and thirty-five cases also occurred in Erie, three being fatal. In the latter place, thirty-seven carriers were also isolated, quarantine being established in such cases until negative cultures were obtained from nose and throat. These were all children in attendance at public schools. In this connection it is unfortunate that our rural authorities do not more readily grasp the importance of school medical inspection so that cultures of suspicious throats may be more generally obtained in the county school districts.

Whooping Cough: Forty-one cases of this disease were reported, four of these being from townships, and thirty-seven from the borough of Waterford, all the latter occurring in the month of December. The earlier cases unfortunately were not quarantined, there being no board of health in this borough, and the supervision of the town not being placed in my hands until late in December. Only a few of these cases were under medical care. A canvass of the borough, however, resulted in unearthing the number above given. This again illustrates the necessity for State supervision in small boroughs that

are not very well provided with funds for the support of active health work. Had a live health officer been in charge in this instance, it is probable that the first, or certainly the second or third case of this disease would have been discovered and by isolation the spread of the disease averted. Whooping cough was mildly prevalent in the city of Erie, one death occurring from that disease.

Typhoid Fever: This disease to the number of twelve cases was reported from six townships and one borough. No definite source of infection was found in these cases, each being an isolated one. In the city of Erie thirty-six cases of typhoid fever were reported. Of these, nineteen, or more than one-half, were traceable to outside sources of infection, a very satisfactory demonstration of the efficiency of our system of water purification.

Erysipelas: Nine case of this disease were reported, one in the borough of Girard, eight in five townships, while in the city of Erie thirty-nine cases occurred, all being of a severe type.

Tuberculosis: Two cases of this disease, both deaths, were called to my attention. It is evident that rural physicians do not make any attempt to report names of persons suffering from this ailment. It would certainly seem that an active campaign of education, the main feature of which should be legal prosecution, could be justly launched in connection with the neglect of this most important duty. One hundred and eighty-six cases of this disease were reported in the city of Erie, with ninety-four deaths. Of the cases reported, practically one-half were through the medium of the local State Dispensary.

Poliomyelitis: Thirty-seven cases of this disease were reported outside of the city of Erie, and in the latter place eighty-two cases of this disease were also recorded. This ailment was first observed in LeBoeuf Township, in July, the case being a seven year old child in the family of a cheesemaker who had charge of a large dairy farm, in connection with which a cheese factory was operated. No previous ailment of this character had ever occurred in this family, or among any of their friends, nor had there been any exposure in any way to children or persons afflicted with any disease resembling this ailment. The family lived in a cottage, situated well up on a gravelly sidehill several hundred feet from the nearest barn or stable, and about fifty feet from the public highway, the house being placed in such a location that the road dust never affected the inmates. A dog and cat were maintained in the way of family pets, and chickens existed about the farm premises where children played daily. There were also numerous horses and other farm animals on the premises. The house itself was well screened, clean and free from flies and other vermin. The case itself represented a very severe type of the disease, the child being paralyzed in the lower extremeties and the respiratory muscles involved to a considerable degree. In this same month two

cases appeared in Fairview, in the western part of the county, approximately twenty-five miles distant from the case to which we have just referred. These were located in a summer camp on the lake shore, where children in families from the central part of the State were spending their summer months as summer cottagers. They had, however, been living in this locality for about two months before the disease developed. In the month of August thirteen cases were noted in various parts of the county, a large number of these being in Millcreek Township, adjacent to the city of Erie where poliomyelitis was also epidemic at this time. It was impossible to ascertain with any degree of accuracy whether or not these cases were intimately associated, inasmuch as many of them were among Poles and Roumanians, who spoke little or no English, and who are very averse to giving definite information concerning contacts. However, enough data was gathered to satisfy me that such contact as may have existed was indirect in character, if it existed at all, and could in no way have any bearing on the prevalence of the ailment.

In September another thirteen victims were added to the list, these being also scattered about the county. Among these, however, were seven borough cases, five in the borough of Wesleyville and one each in the boroughs of Cranesville and Fairview.

In October an additional six were noted, the epidemic terminating in November when but two cases were reported. The outbreak involved three boroughs with seven cases, and thirteen townships, in which thirty occurred. These cases were gone over carefully, many of them by the expert investigators sent here by the State Department of Health. All were checked with a view of eliminating those that might be considered doubtful. Many others were examined carefully, at the request of the attending physicians, parents and others, to ascertain whether or not they were suffering from this disease. It is my belief that the above figures include all such as occurred outside the city of Erie proper.

With reference to the city of Erie, in which eighty-two known cases existed, the first patient known to be suffering from this ailment was called to our attention about March 1st. On investigation we found the date of onset to have been January 8th. The people being very poor, no physician was called at the time until the family became discouraged over the continued paralysis, and consulted a doctor, with the result that the case was reported and correct data obtained. Two cases developed in May, several blocks distant from the one which occurred in January. The latter two were within three blocks of each other, but were not identified either by race, religion, or any social connection whatever. In July nine cases in children were reported and on investigation were found to be suffering with this disease. These were all on the east side, and were, with very few exceptions, several blocks distant from each other.

In August thirty-six additional cases were reported. These occurring immediately after our flood, were believed by many persons to be due to conditions existing therewith, especially with reference to a pest of mosquitoes which invaded the city just after that time. As very few cases, however, occurred within any reasonable distance from the flood district, and the prevalence of mosquitoes was due to the excessively rainy season that we endured at that time, no evidence could be found to show that this insect was in any way responsible.

In September an additional twenty-one cases were reported, with eleven in the following month of October, and two in November, at which time in the city as well as the county, the disease apparently ceased to exist.

When it became definitely apparent that poliomyelitis threatened to become epidemic in the city of Erie, the board of health requested the State Department of Health to send one or more persons conversant with this disease to Erie, for the purpose of studying the outbreak to ascertain, if possible, the cause of the disease. In compliance with this request, Dr. Dixon immediately secured the assistance of Drs. Herbert Fox and Damaso Rivas, of the University of Pennsylvania, who came to Erie, went over the field thoroughly, including both city and country, visited the cases in existence, including many suspects, and made a diagnosis in numerous instances, thus alleviating the fear which existed in the minds of our citizens. Drs. Fox and Rivas secured many data, and their report, no doubt, will more fully describe the outbreak of the disease in this vicinity.* It is needless to say that practically every possible source of infection was considered, including foodstuffs, wastes, animal life, vegetation, insects, household environment, sanitary conditions, exposure to other cases, climatic conditions, temperatures, occupations, water supplies (ground and other), soil, age, sex and other conditions, rain, flies and seasons. In none of these, however, could a satisfactory explanation be given for this outbreak. It is interesting to note the conditions during a five year period, beginning January 1, 1910, and ending December 31, 1914, poliomyelitis existing in the city of Erie as follows: 1910, nine cases, one death; 1911, two cases, no deaths; 1912, twelve cases, one death; 1913, one case, one death; 1914, one case, one death. As none of the patients of the present year were connected, in any way, shape or form, with those suffering from the ailment during the period above referred to, it would seem that infection from this source could be absolutely eliminated. The total number of deaths, among the one hundred nineteen patients, was eight, one of which was of the cerebral type, five bulbo-spinal, also two of the latter type, in which the contributing cause of death was

*The report of this special investigation may be found among the Special Reports in this volume.

pneumonia, the latter disease in both instances developing several weeks after the primary attack of poliomyelitis. There were three families in which two children were affected and one family in which three cases developed. In one of those families in which two cases occurred, one week elapsed between the onsets of the cases. In the family in which three occurred, two developed on the same day, and one week previous to the others. In the others the secondary onsets were within twenty-four hours after the first case appeared.

In addition to the work above referred to, a number of complaints of insanitary conditions involving water supplies have been investigated. All of these have either been referred to the Engineering Division or, in event of water supply being involved, samples have been taken and the necessary analyses made. Some other work of a minor nature, including many conferences with township health officers, has been attended to. This was, however, of such a character as to require no special reference, being covered by the general heading "Instructions to Township Health Officers."

FAYETTE COUNTY.

Dr. O. R. Altman, C. M. I.

Fayette County during the year 1915 can report considerable change in the number of cases reported and all show that the work of the Department of Health has improved materially in every line concerning communicable diseases. Nine hundred and ninety reportable diseases have been reported by the twelve district health officers who represent twenty-four districts as compared with the year 1914, when twelve hundred and twenty-two cases were reported. For the year 1915, three hundred and fifty-eight cases of scarlet fever, typhoid fever and diphtheria were reported as compared with six hundred and fifty-eight for the year 1914. This comparison alone shows an improvement of almost fifty per cent. As stated in my last annual report, the improvement of all reportable diseases has been greatly due to the interest and systematic handling of the employes of the H. C. Frick Coke Company, who have made wonderful strides in sanitation and improvement of their coal towns throughout the whole of Fayette County. Since my last report other companies, such as the W. J. Rainey Coal and Coke Company and the Bessemer Coal and Coke Company, are beginning a series of investigations pertaining to their sanitation and water supplies. I have had an opportunity to present these matters to all of these companies, as well as a number of private companies, who are bettering their conditions. Most of these companies are organizing sanitary committees among the em-

ployes, aided by the company physicians and nurses employed to assist them in their work. These organizations, doctors and nurses should control and prevent many of our contagious diseases throughout this region, especially typhoid fever, scarlet fever, diphtheria and measles. The nurses, physicians and members of this committee investigate in person every sign of disease that appears among their people, and oftentimes they are quarantined before the outside physicians are even called. We endeavor to work in harmony with them, and they usually report to me by telephone, so that I can have the health officer visit these various towns as soon as the reports are made.

Typhoid Fever: Typhoid fever in this county shows a falling off in the number of cases reported as compared with 1913 and 1914. The number of cases during the year 1913 was 304; in 1914 it was 210; and in 1915 it dropped to 169. There has been no epidemic of typhoid fever, the cases being widely distributed in the outlying districts. Two inspections were made for this disease, the first being on June 21, when I was sent by the Chief Medical Inspector to investigate some thirty or forty cases at the Diamond Works, Washington County. I was in consultation with Dr. R. C. Waggoner, of Brownsville, just across the line in Fayette County. This small epidemic was due to infected wells, there being only two wells to supply this little coal town and both proved to be infected with the colon bacillus.

In August an inspection was made at Newtown, Fayette County, at a plant of the H. C. Frick Company, directly opposite the Diamond Works, Washington County, where they had a few cases of typhoid fever, and were anxious to hunt out the cause and if possible prevent any spread of the disease.

Scarlet Fever: Ninety-four cases of scarlet fever were reported during the year 1915 as compared to two hundred and thirty-seven for the year 1914.

My first inspection was made at Orient, Luzerne Township, Fayette County. I was called in consultation with Dr. C. H. Davidson, New Salem. We found three cases of scarlet fever, two in the family of M. M., and one in the family of F. W. No other cases were reported.

Diphtheria: Ninety-five cases of diphtheria were quarantined for the year 1915 as compared to one hundred and eleven in the year 1914.

One inspection was made during the month of September at Bessemer Works, Nicholson Township, Fayette County, in the family of J. S.

Smallpox: No cases of smallpox were found in Fayette County during the year 1915. The previous year, 1914, we had two cases. It was necessary, however, to make three inspections for suspected smallpox.

The first inspection was made on March 23, at Masontown, Fayette County, where I was called in consultation with Drs. Neff and Mechem for a suspected case of smallpox. We found chicken pox.

The second inspection was made on June 18. I was called in consultation with Dr. H. B. Guither at the home of Mr. C., Georges Township, Fayette County, and a diagnosis of chicken pox was made.

The third inspection was made on December 22, when I was called to see Mrs. E. S., North Union Township, who was supposed to have smallpox. We found an unusual skin eruption, nothing of a serious nature. On account of her poverty we sent her to the county home.

Measles: From reoprts the measles epidemics of the year have been mostly in boroughs, especially Connellsville. Seventy cases of measles have been reported to me, there having been 150 reported in 1914 and 1,181 for the year 1913. This shows a decided improvement in the number of cases reported. There was only one coal town that gave us any trouble, that being Oliver No. 1, 2 and 3, North Union Township.

An inspection was made on October 20, when it was reported some thirty or forty cases were not under quarantine. We made an effort to round up these homes and a house to house canvass was undertaken in order to make a diagnosis. Few cases were found as compared to the report.

Mumps: A hundred and ninety-two cases of mumps were reported for the year 1915, there being a hundred and eighty-eight for the year 1914, a slight increase. Mumps have been more general this year than usual, that is they come from almost every district in the county.

Erysipelas: There were sixteen cases of erysipelas for the year 1915, there being ten cases reported for the previous year.

Summary of Inspection Work as Reported by Cards for the Years 1913, 1914, 1915.

	1913	1914	1915
Forms 37 received during year from health officers, ...	1,013	1,942	677
Forms 36 received during year from health officers, ...	2,145	1,164	896
Total time consumed in Medical Division, hours, ...	395½	260	149½
Schools ordered closed during the year, ...	14	5	3
Distance traveled by street car, miles, ...	297	234	210
Distance traveled by livery, miles, ...	198	236	52
Distance traveled by train, miles, ...	40	42	20
Distance walked, miles, ...	32½	19	10
Health officers instructed in office, ...	32	19	12
Health officers instructed by telephone, ...	40	41	36

Following is a short review of the work of health officers of Fayette County, it having twenty-four townships which are divided into districts, each of the twelve districts being in charge of a health officer.

There have been reported through health officers:—

	1913	1914	1915
Measles, ...	1,181	157	70
Typhoid fever, ...	304	210	169
Scarlet fever, ...	140	237	94
Diphtheria, ...	242	111	95
Mumps, ...	65	188	192

Whooping cough,	140	183	106
Chicken pox,	60	72	140
Erysipelas,	11	10	16
Cerebrospinal meningitis,	4	3	1
Pulmonary tuberculosis,	39	38	81
Tuberculous glands,	0	0	1
Pneumonia,	6	5	6
Smallpox,	1	2	0
Tetanus,	0	1	0
Impetigo contagiosa,	0	1	5
Trachoma,	0	0	5
Malaria,	0	0	2
Spinal meningitis,	0	0	2
Scabies,	0	0	1
Not listed,	0	4	2

FOREST COUNTY.

Dr. F. J. Bovard, C. M. I.

I have the honor to report as follows for the year 1915:

During January we had an epidemic of measles in Barnett Township. Twenty-five cases were reported. Only isolated cases appeared elsewhere in the county. Our northern townships of Howe and Kingsley have been reporting cases of scarlet fever since spring, but during September and October there were sixteen cases. Some few cases were reported in Hickory Township. We had two cases of typhoid in Hickory Township and two cases in Barnett Township at different times during the year. Mumps were prevalent in Hickory Township during the fall. Only two cases of chicken pox were reported in the county. Little trouble has been experienced through non-reporting by physicians, but householders still fail in the majority of instances to report communicable diseases.

FRANKLIN COUNTY.

Dr. John H. Kinter, C. M. I.

Following is a summary of work done in Franklin County in the year 1915, after my appointment in February:

This report will have to be limited to the above period for the reason that the reports of Dr. Paul Allen, my predecessor, were lost and did not come into my possession.

Contagious Diseases Reported by Health Officers.

Typhoid fever,	141 cases	Dairy farms inspected for:—	
Diphtheria,	116 cases	Typhoid fever,	33 cases
Scarlet fever,	28 cases	Diphtheria,	23 cases
Measles,	9 cases	Scarlet fever,	5 cases
Chicken pox,	19 cases	Examined cases alleged to be:—	
Whooping cough,	60 cases	Typhoid fever,	3 cases
Mumps,	16 cases	Diphtheria,	1 case
		Scarlet fever,	2 cases
		Schools examined for:—	
		Impetigo,	1
		Schools closed for:—	
		Diphtheria,	3

Forms 36 received,	215
Forms 37 received,	212

Smallpox: Wednesday, August 4, the Chief Medical Inspector telephoned me to meet him at Quincy to visit a case. After my arrival we went to the orphanage and found a well developed case of smallpox. The patient, Mrs. A. E., Matron, came from Weston, West Virginia, July 29. On the following Wednesday, feeling indisposed, she went to Waynesboro to consult Dr. Enniss. He being suspicious called in Dr. Shoemaker, who confirmed his diagnosis. They immediately advised Dr. Royer, who arrived at the orphanage that afternoon.

After an examination we found the patient in about the fifth or sixth day of the disease. The orphanage was immediately quarantined and guards placed at the entrance. As there was no place suitable in the building for isolation, we placed the patient in a tent on the grounds. Percy Snowberger, health officer, was instructed to disinfect all places visited by the patient during her illness.

The day following, with the assistance of Miss Matthews, all inmates and attendants were vaccinated, making a total of a hundred and eighteen. With such a number we were very fortunate not to have any mixed infection. By re-vaccinating about ninety per cent. were positive, showing all local and constitutional symptoms acquired from a pure vaccine virus.

While visiting the contacts we dropped in and examined the patient and found her going through the usual stages of discrete smallpox.

The reason we were able to confine the disease to one case was probably the fact that the children in the cottage in charge of Mrs. Everson had all been vaccinated within a period of seven years.

We held the contacts under quarantine until the patient had recovered.

FULTON COUNTY.

Dr. J. W. Mosser, C. M. I.

During the latter part of April charges were made to the Department that certain physicians were not reporting cases of scarlet fever in Licking Creek Township, and in accordance with instructions received from the Chief Medical Inspector an investigation was made in the district on May 1st. I learned that the patient who had occasioned these complaints had sickened on April 22 and was going out three days later. On April 29 another case developed. I also learned from the householder that mild scarlet fever had existed in the school all winter, but no case had been reported to the health officer. In this particular instance the attending physician claimed that he re-

ported the case, but the Form 34 was addressed to the health officer of another district, so that if the card was mailed it failed to reach the proper health officer; hence the home was not placarded and quarantine established until after my visit. The health officer was instructed to carefully inquire into all rumors of the existence of the disease, but we had no further trouble in this district.

On May 21, upon receipt of instructions from the Department, I went with a member of the State Board of Education to investigate a site for the proposed new school house in Knobsville, in Todd Township. In my opinion the location was not suitable for a school building, and so reported it to the Department.

On September 16, on receipt of advice from the Department, I investigated a suspected case of typhoid fever in the case of T. M., of Andover. The case was at first diagnosed by Dr. F. as probably typhoid, but his final diagnosis was bilious fever. The clinical history was clearly that of typhoid fever, but as the patient was practically recovered at the time of my visit I was unable to make a positive diagnosis of typhoid fever.

During October the health officer for Belfast Township notified me by telephone that there were rumors that scarlet fever existed in the Morton's Point school. I immediately made an investigation in the district, but found no evidence of scarlet fever. Of the two absentees found at the time of my visit, one showed evidence of having had follicular tonsillitis, the other was well. Sipe's Mills school was also visited where two children had been excluded by the teacher on account of reported exposure to scarlet fever. Children were both well and the reports unfounded.

On November 24, a report that a case of scarlet fever existed in Belfast Township with no doctor in attendance was investigated. Child had not been sick and no evidence of scarlet fever was found.

On December 9, the health officer for Licking Township reported some cases of suspected scarlet fever. All suspects were carefully examined. The patients had inflamed tonsils and sore throat, associated with more or less enlargement of the cervical glands, both the anterior and posterior, but no rash was found. Upon advice from the Department all suspected cases were ordered excluded from school for ten days to see if evidence of desquamation were noticed.

On December 23, I investigated a reported epidemic of chicken pox at Needmore. Found one case that had been attended by a physician and reported. The other had no doctor. As this child had been taken sick while in school, I ordered that the school room be disinfected, and impressed upon the teacher his responsibility in every case where a child took sick while in school.

Of the reportable diseases fifty-one cases were reported in the county during the year, as follows:—

Scarlet fever,	17	Whooping cough,	1
Typhoid fever,	14	Mumps,	1
Chicken pox,	5	Pneumonia,	9
Diphtheria,	3	Tuberculosis,	1

Summary for the Year.

Forms 36 received,	33	Examined cases alleged to be:—	
Forms 37 received,	28	Typhoid fever,	1
		Scarlet fever,	7
Schools closed,	2	Chicken pox,	5

GREENE COUNTY.

Dr. Samuel H. Iams, C. M. I. (Acting).

The past year was not unlike other recent years in this county. The percentage of communicable diseases had neither increased nor decreased perceptibly. We have experienced no serious epidemics and have had a very low mortality from our contagious cases. The work of the several health officers has been prompt, efficient and increasingly satisfactory. Two new health officers have been appointed, chosen from laymen, as their work has proven generally more harmonious than the same duties performed by physicians. The winter work of our Health Department officials is necessarily handicapped by the deplorable condition of our country roads, and the absence of any trolley or steam railway connections between our towns and villages. The county medical inspector is constantly aiming towards efficiency and team work in the local branch of the Department of Health.

Typhoid Fever: During 1915 typhoid fever was the most prevalent contagious disease in this county. Eighteen cases were reported as against five last year and fourteen the year before. Six cases were reported from Monongahela Township, three from the same district. These cases we traced from other sections, being among miners who had moved in from other mining camps having typhoid fever in their midst. Careful quarantine, proper sanitation and disinfection resulted in the recovery of all the cases with no further developments.

Seven cases were reported from Aleppo Township. October 26, Dr. William Grim, of Cameron, West Virginia, called the county medical inspector by telephone, reporting a threatened epidemic of typhoid fever at Sugar Grove, Aleppo Township, Greene County. I immediately notified Health Officer Johnson of that district to visit the premises, together with Dr. Grim, and obtain samples of water from all suspicious streams, wells and springs. Later examination

of these specimens indicated a general typhoid infection. Later the county medical inspector paid a visit to the locality, and after insisting upon the proper sanitary care of the cases and their secretions, the end results were very gratifying as no further cases developed and no deaths were reported.

The other five cases of typhoid in the county were isolated, being scattered over various sections. All of the five recovered except one case near Rice's Landing in which death resulted.

Diphtheria: Eleven cases of diphtheria were reported during the year, which is the same as the preceding year. There were no epidemics of this disease, although there were several so-called threatened outbreaks, but proper prophylactic measures, such as prompt quarantine, liberal use of antitoxin in each case, as well as in exposed cases, prevented any serious epidemics.

One alarming case developed in the Childrens' Home of Waynesburg but made a complete recovery.

On September 13, a case was reported in a school child at Crucible. The onset was rapid and the child died before antitoxin could be obtained and administered. The county medical inspector ordered the school closed and disinfected. No further cases developed.

Scarlet Fever: Eleven cases of scarlet fever were reported compared with five last year. Eight of these cases were reported in Richhill and Aleppo Townships. October 7, Health Officer Johnson called the county medical inspector by telephone relative to the scarlet fever development in his district. Careful instructions were given him as to more thorough care in enforcing quarantine. After this series of cases recovered, there have been no further ones reported.

Smallpox: During the latter part of July, one case of smallpox was reported in the borough of Waynesburg. In the absence of the county medical inspector, Dr. F. S. Ullom, of Waynesburg, visited the patient and pronounced it genuine. Absolute quarantine was established and guards appointed. About two hundred persons were subsequently vaccinated, including all of those exposed to the patient, who was a barber and who had been at work in his shop until a few hours before the diagnosis was made. The medical inspection performed was entirely under the direction of Dr. Ullom and was reported to the Department by him. Properly to include this matter in this report, it will suffice to state that no further cases developed and that the one patient fully recovered.

Chicken Pox: Only two cases were reported during the year. Recovery in both instances.

Measles: Five cases were reported as compared with eight in 1914, and eighteen in 1913. No epidemic developed.

Mumps: Greene County only boasts of two cases of mumps during 1915.

Summary for the Year.

Forms 37 received,	37		
Forms 36 received,	51		
Examined cases alleged to be:—		Dairies inspected,	None
Smallpox,	1	Stock transferred,	None
Typhoid fever,	18	Sale of milk stopped,	None
Diphtheria,	12	School closed (diphtheria),	2
Scarlet fever,	11	Health officers instructed at office,	2
Chicken pox,	2	Elsewhere,	7
Measles,	5	Investigation of waters,	1
Mumps,	2	Total hours consumed,	67

HUNTINGDON COUNTY.

Dr. Howard C. Frontz, C. M. I.

Presented herewith is my report as county medical inspector of Huntingdon County for 1915.

The work of the Department in this county has progressed satisfactorily. The rules and regulations of the Department of Health are better understood and there is less difficulty in carrying out the quarantine regulations. The health officers for the most part have done faithful work.

The work of the borough boards of health is not yet up to standard, but it is hoped that the new regulation, that of the Commissioner of Health taking charge of the health conditions of a borough when a local board of health does not look after the work properly, will have a stimulating effect on this important branch of the health regulation of the State.

The following inspections and investigations were made:—

Typhoid Fever: June 22, James Creek, Penn Township, three cases. Water analysis from spring showed B. Coli. Ordered spring cleaned. No other cases developed.

August 28, by order of the Chief Medical Inspector, I investigated six cases at the plant of the Aetna Explosive Company, Wayne Township, Mifflin County. The plant was in course of construction on a low ground of clay that does not absorb. Their tests of spring and well water showed the water unfit for use. They then used water from a hundred and sixty-five foot driven well and this water was later condemned. They then boiled all drinking water. The closets were well constructed and well cared for. A dairy farm still existed on the premises. A thirteen-year-old girl helped milk and was treated for two weeks for malarial fever. All the cases were from the Lindsay Boarding House, and the milk from this dairy farm was used by them.

September 4, McClellandtown, Walker Township, one case. I investigated the dairy farm. Allowed sale of milk under conditions.

October 14, Alexandria, R. D. No. 1, Porter Township, one case. I investigated dairy farm and discontinued the sale of milk.

November 7, Spruce Creek, Morris Township, one case. I investigated dairy farm and discontinued the sale of butter.

Diphtheria: February 26, Huntingdon, R. D. No. 3, Henderson Township, one case. She was brought to the J. C. Blair Memorial Hospital, Huntingdon, by her physician, who thought she had follicular tonsillitis. The case was isolated in the hospital and the patient recovered. The premises in township and a spring wagon used for transportation were fumigated. No other cases.

May 4, Aitch, Penn Township, two cases. I confirmed the diagnosis.

November 5, Petersburg, Logan Township, one case. School teacher sent to her home in Jackson Township. Boarding place fumigated and quarantined for five days. School closed and school house fumigated. No other cases.

June 27, two diphtheria contacts came from Altoona to Huntingdon on Pennsylvania Railroad train. The coach was fumigated and contacts were given immunizing doses of antitoxin and quarantined for five days.

August 20, Huntingdon, R. D. No. 2, Oneida Township, two cases suspected. Examination proved them not to be diphtheria.

August 12, Huntingdon, R. D. No. 2, Oneida Township, one case. Dairy farm inspected. The sale of milk was continued under conditions. No other cases.

Scarlet Fever: January 30, Blairs Mills, Tell Township, six cases. I confirmed the diagnosis and directed that the quarantine regulations should be strictly obeyed, which had not been done.

March 19, Jacobs, Todd Township, four cases. I confirmed the diagnosis.

July 29, South Huntingdon, Smithfield Township. I investigated and ordered quarantine. Two cases.

Chicken Pox: March 23, Barree, Porter Township. I investigated and ordered quarantine. Three cases. It was found that the epidemic started with six children in the family of W. F. Date of onset from February 11 to 19. No physician in attendance and the children were permitted to go to school. I ordered the school closed and fumigated.

Smallpox: March 26, Calvin, Cass Township. I was called by Dr. F. P. S., of Mapleton Depot, to see three cases of suspected smallpox, three children in family of S. B. not vaccinated. Discrete variety. All contacts vaccinated. Patients recovered. Source probably in blankets from a lumber camp, where the disease existed one year ago, and not used until the severe weather came, early in March, 1915.

April 2, Union Township. I was called by Dr. F. P. S., of Mapleton Depot, to see a boy suspected of smallpox; mild attack modified by vaccination. Source probably from patient attending a sale of household goods by a person who had the disease in his family one year ago. Patient recovered.

September 28, Mount Union Borough. I was called by Dr. J. M. F. to see a case of smallpox, boy aged twenty, worked in tannery. Confirmed diagnosis. Recovered.

Epidemic Dysentery: October 28, Warriors Mark, Warriors Mark Township, seven cases. Drinking water or diet. The diagnosis of typhoid fever was not confirmed.

Statistical Summary of Work.

Forms 36 received,	301	Cases examined alleged to be:—	
Forms 37 received,	221	Typhoid fever,	9
		Diphtheria,	5
Dairy farms inspected for:—		Scarlet fever,	12
Diphtheria,	1	Chicken pox,	3
Typhoid fever,	3	Smallpox,	5
		Epidemic dysentery,	7

INDIANA COUNTY.

Dr. William A. Simpson, C. M. I.

A summary of the work done by your county medical inspector for the year 1915 is as follows:

The area of Indiana County is 829 square miles and is divided into twenty-four townships with sixteen health officers and fifteen boroughs. The county has a population of 66,210. Of this population 16,454 reside in boroughs, leaving a rural population of 49,756, which comes under the direct supervision of the county medical inspector.

During the year it has been necessary for me to visit three of the townships and three of the boroughs and to travel by rail thirty-four miles and by livery a hundred and twenty-two miles.

This office has received during the year 505 Forms 36 for the placarding of premises where communicable diseases exist. We also received during the year 474 Forms 37 for disinfecting premises, all of which were carefully filed. Last year, 645 Forms 36 and 591 Forms 37 were received. In 1913, 846 Forms 36 and 706 Forms 37 were received, showing a considerable decrease from year to year.

Of the communicable diseases to be reported, only eleven were reported by the seventy-two physicians practicing in the county.

Chicken Pox: Forty-seven cases were reported as compared with forty-eight cases last year. This disease occurred in thirteen of the townships and in nine of the months of the year. More than half of the cases occurred during October, November and December.

Diphtheria: There were reported one hundred and sixty-six cases of this disease as compared with a hundred and seventy cases last year. Only four townships showed an absence of this disease while seventy-three of the cases occurred in three of the townships. This is the most prevalent of the communicable diseases reported to this office. It was necessary for me to visit Center and Montgomery Townships in regard to laxity of quarantine for this disease. This disease was well scattered throughout the year but October, November, December and January showed the greatest number of cases.

Erysipelas: There were nine cases of this disease reported. The cases were well scattered and required no action from this office.

Measles: The number of reported cases of measles has been falling off each year. This year only forty-eight cases were reported as compared with a hundred and seventy-one cases in 1911 and three hundred and eighty-seven cases in 1913. This disease occurred in every month of the year and in fourteen of the townships, the cases being well scattered.

Mumps: Sixty cases of this disease were reported, being greatly in excess of the number of cases reported during the past three years. Of this number, twenty cases occurred in Pine Township. Forty of the total number of cases occurred in February, April and May. No action was necessary from this office.

Pneumonia: Only two cases of this disease were reported to this office during the year.

Scarlet Fever: Seventy-seven cases were reported as compared with ninety-six reported last year and a hundred and fifty-seven for the year before. Banks and Green Townships reported thirty-four of the cases this year. Only five townships showed an absence of the disease and it was present in every month. More cases, however, were reported during December and January.

Smallpox: One case of smallpox occurred in Burrell Township. I visited this case and established an absolute quarantine, which was well maintained, and no other case occurred.

Typhoid Fever: Of this disease forty-nine cases were reported as compared with fifty-two of last year and a hundred and twelve for the year before. Although the disease occurred in every month of the year, the majority of the cases (twenty-six) occurred in October and November. The disease was much more prevalent in Green Township as there were nineteen cases reported from there. Seven townships were entirely free from this disease.

Tuberculosis: Six cases were reported to this office. Apparently only the terminal cases were reported and then only for the purpose of fumigation.

Whooping Cough: Forty cases were reported as compared with fifty-four cases last year. In Center Township the disease was epidemic, twenty-two cases occurring in that township.

The following tables will, I think, give a clear idea of the number of cases of reported disease in each of the twenty-four townships and also the number of cases in each of the twelve months.

In addition to the above work it was necessary for me to visit the borough of Plumville, where there was a dispute or friction existing between the board of health and the attending physician.

It was also necessary to visit the borough of Jacksonville, where the board of health had trouble with a property owner who was harboring a contagious disease (mumps).

A trip to Brushvalley Borough was necessary to make a sanitary inspection of their school.

The sixteen health officers in this county have carried out their work, I think, in a satisfactory manner. A large proportion of their work is among foreigners—miners—and occasionally considerable annoyance is caused by disobedience or a laxity in the observance of the rules regarding quarantine.

REPORTABLE DISEASES IN INDIANA COUNTY BY TOWNSHIPS.

	Chicken pox.	Diphtheria.	Erysipelas.	Measles.	Mumps.	Pneumonia.	Scarlet fever.	Smallpox.	Typhoid fever.	Tuberculosis.	Whooping cough.	Total.
Armstrong,				1							2	3
Banks,		1	4	1	1		15		1			23
Blacklick,		3		1	2							6
Brushvalley,		7								1		8
Buffington,		2					1					3
Burrell,	1	6		5	1		4	1	1			19
Canoe,	10	6		1		2	3		3	5	6	36
Center,	7	30	1	4	3		3		5		22	75
Conemaugh,	2	5			5				2		2	16
Cherryhill,		6		10			5		3			24
Grant,		4					2		1			7
Green,	3	24	1	5	7		19		17		6	82
E. Mahoning,	1		1				1		4			7
N. Mahoning,	1	2		1			1		1			6
W. Mahoning,			1				1		1			3
S. Mahoning,		7					3					10
Montgomery,	1	19	1				5					26
Pine,	13	17			20		1		1			52
Rayne,	5	3		1			8		4			21
White,		1		1			2					4
Washington,	1	5		2	1				1			10
W. Wheatfield,		2		4			1		1			8
E. Wheatfield,	1	16		11	1		1		1		2	33
Young,	1				19		1		2			23
Total,	47	166	9	48	60	2	77	1	49	6	40	505

REPORTABLE DISEASES IN INDIANA COUNTY BY MONTHS.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Chicken pox,	4	1	8	4	1				1	7	11	10	47
Diphtheria,	21	9	7	10	6	8	9	13	20	28	18	17	166
Erysipelas,	1	2	1	2	1						2		9
Measles,	4	9	1	3	5	5	1	3	1	5	1	10	48
Mumps,	8	14	6	11	15				1	1	1	3	60
Pneumonia,			1								1		2
Scarlet fever,	12	9	7	6	4	2	5	1	9	3	9	10	77
Smallpox,				1									1
Typhoid fever,	3	1	1	1	1	2	2	1	4	16	10	7	49
Tuberculosis,	1		2	1			1		1				6
Whooping cough,	19	3	5		1	2			6			4	40
Total,	73	48	39	39	34	19	18	18	43	60	53	61	505

JEFFERSON COUNTY.

Dr. S. Meigs Beyer, C. M. I.

Annual report of work done during the year 1915.

On January 2, I instructed Health Officer Murray relative to an epidemic of diphtheria in Winslow Township. I advised the closing of the Best school for a period of ten days, and that it should be fumigated before being used for school purposes. This was done by the board.

On March 23, in company with J. W. K., health officer, visited the Baun school district in Pine Creek Township, inspecting a scarlet fever epidemic. We visited eight homes, and I examined thirty-two children, among whom I found nine positive cases of scarlet fever. The school and church in the vicinity were closed and fumigated.

Dr. J. B. N., of Reynoldsville, reports that the condition of the public highway at Rathmel is very insanitary, due to drainage from an alley contaminated by offal from residences nearby, this obstructing the road. H. O. M. investigated and the nuisance was abated.

Inspected the premises of J. K. P. A., Rose Township, for typhoid fever. Found that this family depended upon a spring for water, this spring being on very low ground and near a run which frequently overflows into the spring, the use of which was condemned. The infection of the present patient was likely due to one of two causes. I strongly suspect that the mother is a typhoid carrier. Secondly, during the spring months an old pit formerly used for typhoid stools was opened and the contents plowed up; drainage from this (thirty feet away) covered the lawn and flower beds about which the patient worked considerably before taking sick. The use of this water supply was discontinued.

September 24, in company with Health Officer McL., I investigated an epidemic of typhoid fever in Summerville Borough and in Clover Township. Eleven cases were visited and examined. A census was taken of each. These cases were evidently infected from a spring on the hillside from which every case had been using the water. Toilets drained directly into this spring. It was condemned. I made a sanitary inspection of parts of Summerville Borough.

On October 15, I investigated an epidemic of diphtheria at Wishaw, Winslow Township. On request of Dr. H., I examined nine cases in which a positive diagnosis was confirmed. A number of indeterminable cases were put under quarantine.

On October 16, I made a personal investigation of a dumping ground at Albion, Young Township. The owner, J. H., had an epidemic of cholera among his pigs. This man had been so consistently violating all the health laws, that I found it necessary to threaten him with a fine. Full sanitary instructions were given and carried out.

On October 22, I investigated the public school at Siegel, a pupil being reported as having an acute infectious disease. This did not prove to be the case.

On October 25, I investigated the Pifer school on complaint of G. T. that pupils were suffering with a contagious skin disease. I found a case of Herpes Zoster and a child suffering with a tibial ulcer due to a severe trauma, both children being of the same family.

December 8, I investigated a suspected case of scarlet fever at Wishaw, at the request of Dr. H. This proved to be a typical case. The family objected to quarantine, but finally consented and obeyed very well.

December 9, I investigated an epidemic of chicken pox—Tunnel Hill school district, Rose Township. I inspected ten positive cases and established quarantine. A number of cases were examined that were suspected, but no evidence could be found that they had had the disease.

During the year the following cases were reported to me:—

Typhoid fever,	57	Schools closed—for diphtheria,	3
Diphtheria,	36	Schools closed—for scarlet fever,	1
Scarlet fever,	26	Church closed—for scarlet fever,	1
Measles,	11		
Chicken pox,	68	Examined cases alleged to be:—	
Whooping cough,	3	Typhoid fever,	12
Mumps,	4	Diphtheria,	9
Pulmonary tuberculosis,	23	Scarlet fever,	32
Erysipelas,	3		
		Water supply condemned for typhoid,	2
Forms 36 received,	231		
Forms 37 received,	228	Examined ten cases of chicken pox.	

JUNIATA COUNTY.

Dr. W. H. Banks, C. M. I.

I desire to submit the following summary of the work done during 1915:

During May, June and July of this year, I made a number of inspections in the vicinity of Roaring Run for the purpose of locating the carcasses of horses that had been left unburied by lumbermen working there and were contaminatng the Roaring Run stream, which serves as a source of water supply for summer cottages and picnic grounds along the narrows between Mifflintown and Lewistown. Six or eight carcasses were found, and not being able to locate the owners I had them cremated and buried.

Scarlet Fever: July 28, at the request of Health Officer Campbell, I visited Cross Keys in Lack Township to examine several cases of sickness believed to be scarlet fever and not under the care of a physician. I examined children in five families and found scarlet fever in three of them. These houses were at once quarantined and placarded.

I also visited the dairy farm of Ira Bashore in Fayette Township, where the sale of milk was stopped on account of scarlet fever in his family.

Typhoid Fever: I visited M. G. in Tuscarora Township and in Fayette Township, at which places it was arranged to have the milking done away from the infected premises on account of typhoid fever in these houses.

Schools were closed for fumigation in all instances where contagious diseases developed in pupils while they were attending the school and several churches were also closed for fumigation.

I get much encouragement from the increased public sentiment in favor of quarantine and disinfection. With very few exceptions, those who have had a contagious disease in their home desire to have that home carefully disinfected after the disease is over. Sentiment is also rapidly developing to the point that a family attempting to conceal a contagious disease, in order to escape quarantine, is looked upon as guilty of a criminal act toward the community.

I have kept in close touch with the health officers, and through them the various sicknesses in their districts, and have encouraged them to telephone or write for instructions in all cases where they are in doubt.

Statistical Summary of the Work.

Forms 36 received,	73
Forms 37 received,	70
Cases examined alleged to be scarlet fever,	15
Cases examined alleged to be diphtheria,	8

Stock transferred on 1 premises on account of typhoid fever.
Stock transferred on 2 premises on account of scarlet fever.

LACKAWANNA COUNTY.

Dr. J. C. Reifsnyder, C. M. I.

Permit me to make my report as county medical inspector for the year 1915, including abstracts of letters reporting communicable diseases.

The following number of communicable diseases were reported from second class townships and from one borough which was under the direct charge of the State Department of Health:

Typhoid fever,	3	Thachoma,	1
Measles,	16	Scarlet fever,	11
Diphtheria,	53	Whooping cough,	1
Erysipelas,	1	Chicken pox,	10
Anterior poliomyelitis,	2		

Epidemics investigated:—

Smallpox	Jessup and Olyphant
Scarlet fever and diphtheria	Throop and Dickson City
Anterior poliomyelitis	Ransom Township

Visited for diagnosis:—

Smallpox,	7	Typhoid fever,	2
Chicken pox,	8	Diphtheria,	2
Anterior poliomyelitis,	5	Scarlet fever,	3

One physician, who had been very careless for a number of years in sending reports of communicable diseases, pleaded guilty and was fined. A number of physicians in Lackawanna County were warned. It will be seen from the report of a number of communicable diseases that physicians in this locality are still very careless.

Abstracts of Letters.

Smallpox:

September 17. "Wish to report that according to your instructions I visited A. L. of Canal Street, Northampton, Pa. Rash had appeared September 10th and smallpox was feared. Though his body, face and arms are covered with a pustular rash, I think the disease is chicken pox. However, have ordered quarantine until this diagnosis may be assured."

November 24. "On request of Dr. J. W. L. of Jessup and Dr. G. of Peckville, wish to confirm diagnosis of smallpox in the case of H. U., aged 27; vaccinated in childhood; onset November 17th. He boards in Rashler's Hotel, Jessup, Pa., and there are many contacts. Am preparing to meet the borough council and board of health."

November 25. "In the U. case of smallpox I today met council and the board of health. Absolute quarantine has been established, guards placed, and measures taken to look up and vaccinate all contacts. The case seems to be traced to a suspicious case of rash at the Moosic Mountuain mine where the victim worked.

"Jessup is absolutely filthy and has had no active board of health for years. No communicable diseases have been reported and none placarded, and there are at present many cases of diphtheria and scarlet fever. The council and board promised to remedy this at once, and I shall watch the matter very carefully and report to you my findings."

November 26. "To-day in tracing the Jessup case of smallpox visited Marshwood, a part of Olyphant Borough. Found child of U. B. positive case of smallpox. Onset November 21st. Unsuccessfully vaccinated two years ago. No more suspicious

cases at present, though evidence of other cases during the past three months. The mine authorities, as well as the burgess and council of Olyphant, have closed schools, churches and moving pictures, and will give the villages a thorough cleansing and disinfecting. Will report further."

November 27. "Again visited Marshwood and Jessup. In the latter case find that the smallpox case reported November 24th lived in a saloon boarding house; that the people who had lived in this house and been frequently in the bed room where the case was confined had scattered to all parts of the borough. Dr. Cavil had been appointed by the borough council to take charge of the case. He states that if the council will give him the necessary help he will look up all contacts. I advised closing the schools, churches and Sunday schools, as well as moving pictures; all to be disinfected before opening. The council will pass an ordinance for general vaccination and institute free vaccination."

November 27. "Dr. Hull, from the Department of Health, has just arrived in Scranton and will go over the Jessup and Marshwood cases of smallpox with me.

"I have reason to believe that the board of health of Throop has not been placarding, disinfecting or quarantining any cases in that borough for some years. We will investigate the matter."

November 28. "Another case of smallpox has been discovered at Jessup. I have written the superintendents of the street railway and both railroads passing through Jessup that all cars should be cleansed and disinfected. This will be done promptly."

November 29. "Dr. Hull, the Associate Chief Medical Inspector, and I visited Jessup and Marshwood, finding the authorities in both places following the suggestions given several days ago.

"We visited Throop, met the secretary of the board of health, and urged compliance with health rules. Though there are twenty cases of diphtheria rumored, none have veen reported. Dr. Hull talked to both the president and secretary of the board of health."

November 30. "Met the council and board of health of Throop and they promised to institute an active board of health at once. Dr. Murray, the health officer, claims that an immediate investigation will be made of cases quarantined and placarded."

December 1. "Investigated suspicious cases at Olyphant and Jessup. The Olyphant cases were impetigo. We also found impetigo in one of the Jessup families. The third case, foreigner, age four, in Jessup, never vaccinated. Onset November 25. Smallpox."

December 4. "Visited Jessup to meet Dr. Cavil. The suspicious case proved diphtheria; boy, age three, never vaccinated. Onset November 27th."

December 21. "On December 17th visited Dickson City in consultation with Dr. Aaron Cantor. He had five cases of peculiar rash. Supposed onset December 11th; children successfully vaccinated two years ago.

"He took me to see a neighboring family where we found a child, age six, never vaccinated, with rash very suspicious of smallpox. Onset December 16. We suggested quarantine for further observation."

December 22. "Dr. Hull, the Associate Chief Medical Inspector of the State Department of Health, visited Dickson City with me to-day and excluded smallpox in the familiy I had written to you about yesterday. A diagnosis of chicken pox was made."

December 23. "Investigated Mayfield Borough on reported doubtful cases. Found no smallpox, though chicken pox is very prevalent. The board of health is active and seems to be doing its duty."

Poliomyelitis:

October 9. "In response to request from Dr. Newman, visited A. E., age three, daughter of F. E., of Ransom Township.

"History of whooping cough May 15th to July 10th. Had never been away from home. No visitors at the house this summer. Child had gone with bare feet a few times in the farm yard. No wading; no knowledge of insect bites; no driving or riding. In good health before and after pertusis; onset September 28th; fever, malaise, slight nausea. Paralysis October 2 of lower limbs. Verified diagnosis poliomyelitis."

October 15. "In response to request from Dr. Van Sickle saw two positive cases of anterior poliomyelitis.

"O. T., 213 River Street, Olyphant; age fifteen months. Onset October 4, with nausea, vomiting and fever. Paralysis of lower limbs October 9th. No history of other suspicious cases in the neighborhood. Family Italians, who kept a saloon. Child has not been away from home and no visitors. No history of insect bites.

"The second case, W. V., age nineteen months, 112 Green Street, Olyphant; a block away from case No. 1. Began October 9th with vomiting, restlessness and fever. Paralysis October 12th of lower limbs. The same findings as in case No. 1. No history of other cases."

Typhoid Fever:

October 28. "Verified diagnosis of typhoid fever in case of L. S., age ten. Onset October 6th. Slight meningitis as complication. Visited the case with Dr. Newman in Ransom Township.

"Several cases of typhoid fever had appeared in the home of Mrs. O. S. These cases had been on a picnic, drinking water in the Dunmore section and near the Scranton water supply at Lake Scranton."

October 14. "Am sending samples of water from one well and two springs whence the S. cases of typhoid obtain their water."

Diphtheria:

October 26. "In response to a telephone message that quarantine was not maintained at the home of E. W., where there was a case of diphtheria, in Covington Township, I to-day visited that section. Found a case of diphtheria, Mrs. E. W., age seventeen. Onset August 24th. Berries were being picked and stored in the house and several minor discrepancies found. The people were very willing to follow instructions."

October 13. "Visited Dickson City with Dr. Cantor to verify case of diphtheria; case of S. F. October 12th, deputized Dr. J. W. Kneedler to investigate alleged case of diphtheria, near Moscow. One dead; two other cases in the house. No quarantine. Dr. T. W. W. in attendance."

October 29. "Visited house of Mrs. W., Covington Township, where my deputy, Dr. Kneedler, had found diphtheria and no quarantine. Shall make out information against Dr. T. W. W. before Justice B. of Moscow."

November 2. "Following the directions of General Inspector C. W. Webbert, of the State Department of Health, information was brought against Dr. T. W. W., of Moscow. The justice of the peace found the doctor guilty and put the costs on him. The doctor acknowledged that he had been careless and will follow the law more carefully in the future."

November 24. "Investigated fifteen cases of diphtheria and two cases of scarlet fever in Thropp. The board of health has been very inefficient and no reports received from the local doctors."

December 2. "After meeting the Throop board of health and council am certain that the State health laws will be better observed in the future.

"Thank you for sending the inspectors from the Engineering Department to look up milk dealers and sanitary conditions through the borough."

I wish to report that on September 9 the State Department of Health took over health matters in Dickson City. Health Officer B.

F. Franklin was put in charge of the work and the borough notified by the State Department of Health to placard and quarantine in all cases of communicable diseases until the proper board of health was formed. Owing to inability to reach Dickson City, Health Officer B. F. Franklin was relieved in October, and M. Gallagher, of Carbondale, was made health officer.

Health matters have been neglected and sanitation was very bad. Up until December 31, 1915, the State still has charge of Dickson City. The doctors have proved helpful and seem to appreciate the prompt placarding and quarantine. Council has promised an efficient board of health in the near future.

LANCASTER COUNTY.

Dr. J. L. Mowery, C. M. I.

For the year 1915 I take pleasure in reporting progress in every line of work pertaining to the Department of Health in Lancaster County, having 960 square miles and 175,000 population, of which about 95,000 come directly under the supervision of this office.

During the year I traveled 685 miles by rail and 213 miles by livery to perform the duties of my office.

I received at this office 1,006 reports of placarding for communicable diseases (Form 36) and 802 reports of disinfection (Form 37) from the fourteen district health officers in the county, and tabulated them (Form 59). These reports were proven correct before being entered on the records of this office.

Of the 1,006 morbidity reports received, 46 were for diphtheria, 112 for scarlet fever, 123 for typhoid fever, 17 for pneumonia, 445 for whooping cough, 15 for measles, 36 for mumps, 159 for chicken pox, 26 for tuberculosis, 22 for erysipelas and 2 for tetanus.

I had occasion to visit a number of premises where diphtheria, scarlet fever and typhoid fever existed, especially when dairying was made a part of the business, with a view of establishing safe regulations for the disposition of the dairy products. I always noted, if possible, the leading factor responsible for the disease.

Diphtheria: Diphtheria at no time during the year assumed an epidemic form. Through the promptness of the health officers, and the cooperation of teachers and the laity in general, both diphtheria and scarlet fever were early held in abeyance.

Typhoid Fever: Of the typhoid fever cases, quite a number developed in the eastern section of the county again, known as the New Holland district, while the others were pretty evenly distributed.

Whooping Cough—Measles—Mumps—Chicken Pox: Of these diseases, whooping cough was the most prevalent, every month in the year having a notable number of cases. August had thirteen cases, the lowest number, and May had sixty-eight cases, the highest number. Chicken pox was second in prevalence with every month represented except July; August with one case, the lowest number, and December with forty cases, the highest number. Mumps ranked third in prevalence with every month in the year represented except August and October, the other months having a pretty equal distribution.

Pneumonia: Pneumonia was represented on our reports in five months of the year, January, February, March, May and November, and having a pretty equal distribution over these months.

Tuberculosis: This disease has a record distributed through every month of the year with a pretty even distribution over the whole, twenty-six cases embodying the total report.

Erysipelas: Erysipelas was represented over six months during the year with a pretty even distribution, twenty-two cases comprising the total report.

Tetanus: There were two cases of tetanus reported during the year, one in June and one in December.

Aphthous Fever: There was one case of aphthous fever reported to this office which developed in January upon a premise where aphthous fever existed in a herd of cattle.

The health officers of this county have done duty faithfully and with dispatch, few complaints having reached this office. The laity generally have become more conversant with the rulings of the Department of Health, little resentment being shown against its workings. Therefore, the work from this office has become a pleasure, meeting with cooperative influences from all sides. This office is often sought for by boards of health, school boards, churches and private individuals on questions pertaining to health and sanitation.

Statistical Summary of Work Done During the Year.

Forms 36 received,	1,006	Cases examined alleged to be:—	
Forms 37 received,	802	Scarlet fever,	1
Dairy farms inspected for:—		Chicken pox,	7
Diphtheria,	4	Mumps,	1
Typhoid faver.	12	Typhoid fever.	1
Scarlet fever,	6	Whooping cough,	6
Sale of milk stopped,	8		

LAWRENCE COUNTY.

Dr. J. D. Moore, C. M. I.

I herewith present to you a short summary of work accomplished by your officials in this district, namely, Lawrence County, during the year 1915. I deem it not necessary to report for your use the different

reports concerning work already reported to you from time to time as the occasion demanded. I will therefore ask that you refer to a few of these reports by dates affixed if it seems necessary for your purpose.

Through your special request there were made inspections as follows:

March 19. An inspection on account of mumps, in Wayne Township.

April 26. An inspection on account of diphtheria at Brent, Plaingrove Township, consisting of one case and one death.

May 12. Investigation and report of scarlet fever at Oakland, Union Township.

May 19. Report concerning mumps in Oakland, Union Township.

November 27 and 30. Investigation and report concerning smallpox at New Castle.

November 18. A report in regard to the board of health in Volant and Enon Valley.

November 6. A report of provision on account of the death of Health Officer E. N. Houk.

These reports you will find complete and on file in the Department.

Your health officers have been alert and obedient and conscientious in their work as required by you. We are sorry we are compelled to report again to you the death of two of our veteran health officers.

My duties as inspector have been exercised in the inspection and diagnosis of a number of minor cases or rather minor diseases (as considered by the laity). The following I submit:

Number of inspections on account of mumps, ... 68

Number of inspection on account of chicken pox, .. 10

Again I present a summary and enumeration of the different contagious and communicable diseases as reported in this district, together with unreported cases investigated by your inspector or his deputy, as follows:

Mumps,	156	Pulmonary tuberculosis,	7
Chicken pox,	37	Diphtheria,	42
Typhoid fever,	14	Tuberculosis,	1
Scarlet fever,	58	Erysipelas,	1
Pneumonia,	12	Whooping cough,	2
Measles,	11		

Number of Forms 36 received,	279
Number of Forms 37 received,	214
Number of health officers instructed,	50

We have during the year on numerous occasions been called in consultation by wire, letter or visit by the officers of every borough in the district, the purpose of which was instruction in regard to their duty dependent or subservient to the laws of health of this State. On these occasions I considered it a duty without compensation to perform and for this work there has never been a bill rendered.

I trust that this short resume of work performed in this district may meet with your approval.

LEBANON COUNTY.

Dr. A. J. Riegel, C. M. I.

During the winter months we had an epidemic of chicken pox and mumps in the townships of North and South Lebanon, Cornwall, West Cornwall and Heidelberg, spreading by means of children from affected families going to school and not having a physician attending them. This necessitated the health officers and myself making investigations and enforcing quarantine, which met with some disapproval by those who were quarantined, as they considered these diseases too mild to call in a physician and consequently thought they would escape quarantine.

There were a number of cases of typhoid fever, scarlet fever and diphtheria, which, after having been reported and quarantined, and the regulations of the Department carried out, were soon stamped out.

I inspected a number of schools for pediculosis capitis at the request of the teachers and school boards, and asked the teachers to carry out the regulations of the Department in all affected children.

The health officers of this county have been interested in their work, attending to their duties faithfully and promptly, and endeavoring to stamp out communicable diseases as soon as possible, whenever met in their districts.

Statistical Summary of Work Done During the Year.

Forms 36 received,	540	Forms 37 received,	483
Cases examined alleged to be:—		Dairies inspected for:—	
Typhoid fever,	2	Typhoid fever,	18
Scarlet fever,	2	Scarlet fever,	3
Chicken pox,	14	Diphtheria,	18
Whooping cough,	1		
Mumps,	54	Sale of milk stopped at six premises.	

LEHIGH COUNTY.

Dr. J. Treichler Butz, C. M. I.

The summary of the work done for the year will be largely statistical, with only such brief comment as may be necessary to make it clear.

This county has an area of three hundred and forty-four square miles, and is divided into one city, ten boroughs and fifteen townships. The population is about 128,000. The city, boroughs and one first class township contain about ninety-four thousand, leaving the population of the townships thirty-four thousand, with which this report has to do, and coming under the direct supervision of the county medical inspector.

The distance traveled by rail was three hundred forty-one miles and twenty-eight miles by trolley. Hours consumed, one hundred and four.

During the year four hundred and forty-one reports of placarding for communicable diseases (Form 36) were received from the seven district health officers in the county. These officials also sent in two hundred and seventy-two reports of disinfection (Form 37). All these reports were carefully examined and if incomplete or additional information desired, they were returned to the proper health officer before being entered on the records of this office.

Of the reportable diseases, this office had to do with but twelve during the year as follows:

Chicken Pox: Seventy-seven cases of this disease were reported by physicians and householders.

Diphtheria: Sixty-five cases of this disease were reported, Hanover Township having the greatest number.

Erysipelas: Sixteen cases were reported, Hanover Township having the greatest number.

Measles: Thirty-six cases of this disease were reported by physicians and householders.

Mumps: Forty-nine cases were reported by physicians and householders, the greatest number appearing in North Whitehall Township.

Ophthalmia Neonatorum: One case was reported of this disease.

Pneumonia: Five cases of this disease were reported.

Scarlet Fever: Forty-six cases were reported, the greatest number appearing in Hanover Township. Nine dairy farms were inspected on account of the presence of this disease.

Tetanus: One case of this disease was reported.

Tuberculosis: Seven cases of this disease were reported.

Typhoid Fever: Forty cases of this disease were reported. This disease appeared in twelve townships and the greatest number were in South Whitehall Township, seven cases in one family at one time. Four dairy farms were inspected on account of this disease.

Whooping Cough: Eighty-seven cases were reported by physicians and householders, appearing in ten townships, greatest in Hanover Township.

The seven health officers of the county have been uniformly prompt and careful in the discharge of their duties.

I cannot close this report without calling attention to the splendid support given me by the physicians of the community in our work and their reporting their cases promptly.

LUZERNE COUNTY.

Dr. Charles H. Miner, C. M. I.

During the year 1915 there was a marked decrease in the number of reports of communicable diseases (Form 36) sent in by the sixteen district health officers in the county over previous years. Only 539 reports of communicable diseases (Form 36) were received, and 827 reports of disinfection (Form 37). This report compares very favorably with the report for 1914, when 1,045 reports of contagious diseases were received.

Chicken Pox: During the year eighty-one cases of chicken pox were reported by physicians and householders, Hazle Township heading the list with twenty-five cases; Foster Township had twenty cases, Jackson Township eleven cases, Kingston Township seven cases, respectively, and there was an average of two cases in the other nine townships.

Diphtheria: Cases of diphtheria occurred in twenty-one of the townships and in Duryea Borough. In Kingston Township forty-nine cases developed, sixteen cases in Hazle Township, thirteen cases in Duryea Borough, eight in Pittston and eight in Ross Townships, seven in Butler and seven in Union Townships, six in Lake, Black Creek and Fairview Townships, respectively, and an average of one and two in the other ten townships. In all, a hundred and sixty-two cases were recorded.

Erysipelas: Three cases of erysipelas were reported during the year.

Measles: Measles seemed to have been the most prevalent of all the communicable diseases reported during the year, a total of two hundred and fifty-one cases having developed. In Kingston Township there were sixty-two cases, in Foster Township thirty-five cases, in Hazle Township forty cases, in Plymouth Township twenty-seven cases, Salem Township twenty-two cases, thirteen cases in Conyngham and Black Creek Townships, respectively, seven cases in Fairview Township, and six in Hunlock Township, and two and three in the other townships.

Whooping Cough: One hundred and ten cases of whooping cough were reported from seventeen townships, Salem Township having twenty-nine cases, Sugar Loaf twenty-two cases, Black Creek sixteen cases, Kingston Township fifteen cases, five cases in Hunlock, Wright and Huntington Townships, respectively, three in Foster Township, and an average of one and two in the other townships.

Cerebrospinal Meningitis: Two cases of cerebrospinal meningitis were reported from Hazle Township.

Tuberculosis: Fourteen cases of tuberculosis from eight of the townships were reported to health officers where fumigation was required after the death or removal of the patients.

Mumps: Sixty-seven cases of mumps from fifteen of the townships were reported during the year. Kingston Township had twenty-five cases, Foster Township nine cases, and two or three cases in the other thirteen townships.

Scarlet Fever: Eighty-three cases of scarlet fever were reported, Hazle Township with a report of twenty-seven cases, thirteen cases in Foster Township, and nine cases in Plymouth Township, and an average of two cases in the other sixteen townships.

Typhoid Fever: Forty-seven cases of typhoid fever occurred in fifteen townships during the year, which is a considerable increase over the number reported in 1914, when only twenty-three cases were reported. Kingston Township had thirteen cases, Pittston Township seven cases, Hazle Township seven cases, and an average of one case in the other townships.

Besides the contagious diseases recorded under the different headings, two cases of membraneous croup were reported, one case of pneumonia, two cases of scarlatina, and two cases of German measles.

Brief Summary of Personal Interviews and Investigations During the Year 1915.

On January 22, Dr. Neale, of Upper Lehigh, informed me about a suspected case of smallpox at Freeland. From Dr. Neale's description of the case we suspected it was a case of pustular eczema, which it proved to be.

On February 20, after an interview with Health Officer Collins, we ordered the closing of the Lattimer school, Hazle Township, on account of the outbreak of many cases of whooping cough. The school board complied with our request and the school was thoroughly fumigated.

February 25, Health Officer Thomas called up about cases of measles at Trucksville, Kingston Township, which had not been reported, but were excluded from school by the teacher. Ordered the health officer to make an immediate investigation. The Truckville school was closed and fumigated, and the disease checked after this procedure.

February 26, the Mountain school, Jackson Township, was ordered closed and fumigated on account of the number of cases of chicken pox that had developed among the school children.

On March 12, we required the closing and fumigating of the Shavertown school, Kingston Township, on account of measles.

April 9, we required the closing and fumigating of the Forest Grove school, Franklin Township, as a case of scarlet fever was reported to have developed in the school.

June 4, I was called by Dr. Lake, of Kingston, to visit a suspected case of smallpox at 82 Maple Street, Dorranceton. After examination of the patient, I diagnosed the case as chicken pox and reported the fact to the Chief Medical Inspector.

June 19, I visited Hanover, a little mining town, now a ward in Nanticoke Borough, to investigate the sanitaray and housing conditions, sewage system and surface drainage, and reported the matter to the Chief of the Bureau of Housing.

On August 12, Dr. Underwood, of Pittston, called up about cases of typhoid fever in Pittston City that had developed on the milk route of J. L., of Yatesville. Dr. Underwood stated that he knew of eight positive cases of typhoid fever, and three or four suspicious cases, all of which had been using milk from J. L.'s dairy farm. On August 14, I met the mayor and members of the board of health of Pittston City, and accompanied by Mayor Donnelly, I went to the farm of J. L., which is located in Yatesville Borough. Mr. L. was out delivering milk, but we talked with his daughter Blanche, aged twenty-one years, and her mother, who was very deaf. B. L. stated that they had twenty cows and that the milk was taken care of by her mother, father and herself. She said that the only water they used in cleansing the cans was taken from a well near the house, but this is doubtful, as there was another well near the cow barn. The conditions in the cow barn were as insanitary and fifthy as any I have ever seen. At the L. home, beside Blanche, there were two other girls, Margaret, aged ten years, and Jennie, aged nineteen years. They stated that there had been no sickness in the family, and that they had had no visitors, and were all at present in good health. Mr. L. bought eighteen or twenty quarts of milk a day from H. S., who also had a farm in Yatesville Borough. We then visited S.'s farm and found that they had three cows and the milk was being cared for by S. and wife. The dairy was clean and sanitary, and they had four children, all of whom were well. We took samples of water from both wells on the L. farm, and one sample from the well on S.'s farm, which were sent to a bacteriologist for analysis. I instructed the secretary of the board of health to get a complete statement from Mr. L. of the sources of supply of all the milk he sold, and the places where it was delivered. I also instructed them to visit each home where there was a case of typhoid fever and get a complete history of the case, where the milk, water and other foods were obtained, and look up other probable sources of milk supply. We then decided that the most advisable thing to do was to stop the sale of L.'s milk for the present.

On August 26, I went with Mr. Parke, of the Division of Sanitary Engineering, to the L. farm at Yatesville to secure specimens of blood from the families of L., S., and J. for the Widal test. Speci-

mens of milk, butter and water from the L. farm were also sent to the Laboratory of the Department for analysis. Later developments failed to discover any probable typhoid carrier, and the positive source of the infection had not been proven, but that it was due to the milk from the L. dairy seemed most probable, as no more cases of typhoid fever developed after the sale of his milk had been stopped.

On August 16, following instructions from Harrisburg, I went to Folstown, Slocum Township, to investigate three cases of typhoid fever which had developed among eighty men working on the State roads. After a thorough examination of the water and milk supply no positive source of infection could be found. The five suspected springs were disinfected and placarded, and no new cases developed.

September 1, following a complaint of unreported cases of whooping cough in Conyngham Borough, I went with Health Officer Smith to make an investigation. After consultation with two of the local physicians, we found that there were cases of whooping cough in six families, which had neither been reported nor placarded, as the doctors stated that there was no board of health to look after the work of placarding and fumigating the houses. We then called upon the former president of the board of health and the burgess of the borough. Both admitted that the board of health had gone out of existence, as no appropriation had been given by the borough councils to carry on the work. I reported conditions to Harrisburg, and the work in Conyngham Borough was taken over by the State Department of Health until after a meeting of the newly organized board of health was held on October 1st, which I attended, when I recommended that the work be taken over again by the Conyngham Borough board of health.

On September 15th I was instructed by the Chief Medical Inspector to arrange for meeting with the Forty Fort Borough board of health, as six cases of diphtheria were reported and quarantine regulations were not being enforced. On September 20th I met the members of the board of health and the secretary of the school board, who promised to become more active, have more frequent meetings, and provide more careful supervision of sanitary conditions in the borough. I believe that the board of health is now quite efficient.

On October 5th the health officer of Dorranceton Borough called me up in regard to five cases of typhoid fever in the Westside Hospital from Kingston Township. I visited the hospital at once and got the history of each of the cases, and the following day visited their homes in Kingston Township. Other cases developed until there were fifteen cases in Trucksville, Shavertown and surrounding districts. The surface springs used by these patients were disinfected and placarded, and samples of the water sent to the State Department of

Health Laboratories for analysis. There was no one milk supply, and most of the patients secured their milk from different sources. Immunizing doses of the typhoid vaccine furnished us by the State Department of Health were given to the members of the families of six of the patients, and no secondary cases of typhoid fever developed. No definite source of infection was discovered, but the most probable source seemed to be the surface springs at Shavertown and Trucksville, as there were no cases of typhoid fever among the people using the water from the local reservoir.

On November 15, I was directed by the Chief Medical Inspector to visit Hazleton to investigate epidemics of scarlet fever and diphtheria in the town, and on the 19th I arranged to go to Hazleton and meet the members of the board of health and the city clerk. I found that the board of health was in charge of the Commissioner of Public Safety, and that owing to some disagreement the board of health had resigned, leaving the work to be looked after by the health officer. During the months of August, September, October and November, sixty-one cases of diphtheria and twenty-four cases of scarlet fever had been reported. There were five deaths from diphtheria and one from scarlet fever. The closing of the schools was strenuously opposed by the superintendent, which caused some criticism and dissatisfaction. I recommended to the commissioners that they employ a competent trained nurse to visit the homes where cases of diphtheria and scarlet fever existed, urge immunization of the other children in the family, and instruct them to keep the other children in the home. The Commissioners of Public Safety complied with my request and after thorough quarantine regulations were enforced no new cases developed.

LYCOMING COUNTY.

Dr. C. W. Youngman, C. M. I.

In reporting health conditions in Lycoming County during 1915, the only striking feature was a widespread series of epidemics of measles, which reached their height in February, with a total of six hundred and nineteen cases. Having the opportunity in many of these outbreaks, I ascertained that it was almost always spread by personal contact with another case, usually in the incubative stage; also that the worst outbreak occurred when some teacher permitted a child to attend school with a "bad cold" which subsequently turned out to be measles.

Mumps: In one instance the teacher himself started an epidemic of mumps in a township by not reporting his own case nor submitting to quarantine.

I find that where teachers are courageous enough to exclude all pupils showing symptoms of any disease, bad colds included, we have much less disease and a larger percentage of attendance.

We have one township—Loyalsock—where twenty-three schools exist and where the board has a general superintendent who watches these diseases affecting attendance so closely that he succeeds in keeping it up to the highest point. It is of the utmost importance that teachers know and accept the responsibility of watching the health of their pupils, and it is always my practice to inform them that the State has raised their salaries but expects greater returns in increased attendance by freedom from disease, for which they are often responsible.

Reports from all districts but one (601) give cases as follows:

Measles,	619	Typhoid fever,	19
Chicken pox,	38	Scarlet fever,	11
Whooping cough,	87	Tuberculosis,	6
Erysipelas,	7	Anthrax,	1
Mumps,	58	Cancer,	1
Diphtheria,	67		

McKEAN COUNTY.

Dr. F. Wade, Paton, C. M. I.

In July Dr. Ostrander, of Smethport, was called to a case of diphtheria in Cyclone. He reported that several in the community had been ill and that several were at present ill with "sore throats." He was deputized by the C. M. I. to visit Cyclone and make a thorough investigation. He discovered other cases of diphtheria and placed them under quarantine. There were altogether eight cases before the epidemic subsided.

On July 28, I went to Hazelhurst to investigate an epidemic of scarlet fever. We found the probable source of trouble in one family where there were two children in the stage of desquamation. They gave a history of illness but had not had a physician. As most of those in quarantine were of foreign birth, a guard was necessary before quarantine regulations were properly enforced.

On September 15, I visited Hazelhurst. A few cases of typhoid were in existence. On instructions from the Department, samples of water were taken. Analysis showed the water supply to be beyond suspicion. The cases of fever were located in a certain section of the town built on a steep sidehill. In this small section of the town there is no sewage system. Privies were located in parallel lines in the rear of each house, each one higher than its neighbor, and their poor construction allowed considerable surface drainage across the back yards. There was one large open cesspool. The gutters were used

for slops and were foul smelling. Chickens and ducks thrived in these gutters. The fever was apparently due more to this lack of a sewage system than to the water supply.

On October 10, I was called to Eldred to see a case of smallpox. The diagnosis was confirmed, the house placed under quarantine, contacts vaccinated and paroled. No new cases developed.

Total number of Forms 36 received,	114
Total number of Forms 37 received,	97
Dairy farms inspected for scarlet fever,	1
Dairy farms inspected for diphtheria,	1

MERCER COUNTY.

Dr. P. P. Fisher, C. M. I.

I beg to submit to you the following report for 1915. There were reported to me by the thirteen health officers, on Form 36, one hundred and ninety-six contagious and infectious diseases.

Typhoid Fever: There were sixteen cases of typhoid fever reported. It was necessary to stop the sale of milk in two families. I got the water from one well and sent it to the Laboratory of the Department for analysis. No further action was necessary in any of the cases.

Diphtheria: Fifty-eight cases were reported. It was necessary to stop the sale of milk from five premises and place a guard at one home where they were breaking quarantine. The other regulations of the Department were carried out in full. Twenty of the cases were reported from Springfield Township, mostly from the mining district.

Mumps: There were thirty-seven cases of mumps reported, nineteen of them from one township. The school teacher was taken with mumps, and the case was not reported. After she had been at home a few days an ignorant director told her to open school. She did so and infected the whole school. I found it necessary to close the school for two weeks.

Smallpox: I was called to diagnose one case of smallpox at Farrell, one at Greenville, two in Sharon, and two in Hickory Township. All the necessary precautions were taken and the disease was confined to these patients. I was called to Jamestown to see a suspicious case. It was a case of vegetable poisoning and cleared up in a few days. The above cases were infected outside the State and were traced to Ohio.

Scarlet Fever: There were fifty-eight cases of scarlet fever reported. It was necessary to stop the sale of milk from five premises and to enforce quarantine in one family, and to keep one case in

quarantine six weeks on account of discharge from the ears. This case was ordered released by the attending doctor at the end of thirty days, but on inspection I found it was not ready to be released.

Measles: There were three cases of measles reported. Action was necessary for the C. M. I. only in one case to verify the diagnosis.

Erysipelas: One case reported.

Whooping Cough: One case reported.

Chicken Pox: Nine cases were reported. It was necessary to verify the diagnosis in one case, and stop a child from attending school in another family where they had chicken pox.

Summary of Work Performed During the Year 1915.

Confirmed the diagnosis of mumps in twenty-two families; stopped the sale of milk in twelve instances—reason: Diphtheria in five; scarlet fever in five; typhoid fever in two. Stopped a child from attending school—reason, diphtheria in the home. One school ordered closed—reason, diphtheria. Examined one case of alleged diphtheria; three schools for alleged cases of contagious skin disease. Made an investigation of the boards of health at Jackson Center and New Lebanon by order of the Department of Health; found them practically dead. Advised the Department to discontinue the board at New Lebanon and give Jackson Center another chance.

The twenty cases of diphtheria reported from Springfield Township were mostly from a mining camp. I made an inspection and took it up with the superintendent of the mines. We went over the situation, and he was very willing to give the mining houses and surroundings a good clean up, and use plenty of lime. Since the clean up there has been no diphtheria at this mine.

MIFFLIN COUNTY.

Dr. C. H. Brisbin, C. M. I.

During the year 1915 it was found necessary to visit seven of the ten townships and travel a distance of 369 miles by rail and 366 miles by livery.

During the year 257 Forms 36 and 175 Forms 37 were received.

Typhoid Fever: Sixteen cases reported from the following townships: Brown, six; Bratton, four; Derry, three; Union, two; Wayne, one.

About the fifth of June an outbreak of typhoid fever occurred in Lewistown Borough, four cases, all on the Ellinger milk route.

As these cases were all in a radius of one city block, it was considered a local trouble. The Ellinger dairy was inspected, however, by a State inspector and water sent to laboratory.

Mr. Ellinger discontinued the sale of milk for a period of six weeks, and during this time we did not have another case.

In September the disease again broke out on the Ellinger route, and another investigation was instituted by the Associate Chief Medical Inspector of the State Department of Health. The Ellinger dairy was again visited and specimens of blood, urine and feces were sent to the laboratory; the results obtained are presented in a special report. Mr. Ellinger has gone out of the dairy business.

Diphtheria: Forty cases were reported.

It was found necessary to visit eleven homes to arrange for the proper distribution of milk and butter. January was the only month that diphtheria was not reported.

Scarlet Fever: Only two cases during the year.

Measles: A hundred and fifty-three cases. I am satisfied that the number would reach three hundred if every case had been reported.

Chicken Pox: Twenty-two cases reported.

Mumps: Six cases. Two of these were reported by householder.

Whooping Cough: Seven cases, all reported in April.

We still fine quite a number of people that object to quarantine, but nearly all seem anxious for fumigation. This shows that they are beginning to see the value of thorough fumigation.

MONROE COUNTY.

Dr. Walter L. Angle, C. M. I.

During the year fifty-eight reports for placarding communicable diseases were received from the three district health officers in the county. It was necessary to make only three medical inspections. Detailed reports of these having been made immediately after the inspections were completed, it will not be necessary to go into detail again concerning them.

The reportable diseases were widely scattered throughout the county, and in only one instance was it necessary to close a school on account of communicable disease. Of the diseases reportable, this office had to do with but ten during the year as follows:—

Cerebrospinal Meningitis: One case reported during month of February; under the care of a physician, no inspection necessary.

Chicken Pox: Four cases reported from three townships. No inspections required.

Diphtheria: Twelve cases were reported from five townships. It was necessary to visit two townships during the year. In one instance

the householder was not obeying quarantine, and in the other it was necessary to establish a diagnosis. Six of the cases reported occurred in one family.

Erysipelas: One case reported under the care of a physician. No action required from this office.

Measles: Nine cases were reported from three townships. It was necessary to close one school in order to check the disease from spreading. The school was fumigated. No subsequent cases.

Mumps: One case reported during the year.

Whooping Cough: Twenty-six cases reported during the year from six townships. It was necessary to have a health officer inspect seven cases in Stroud Township.

Scarlet Fever: One case reported under the care of a physician.

Typhoid Fever: Three cases reported from three townships. It was not necessary to make any inspections other than that done by the health officers at the time of placarding.

Tuberculosis: During the year eighteen houses were disinfected for this disease. The majority of the houses disinfected were occupied by non-residents, the owners requesting disinfection. The non-resident cases have not been reported in many instances. It is only in case of death or removal that this office hears of the disease having existed in the county.

During the year your representative has been consulted by physicians, school boards and civic societies, and requests made by teachers and school boards for addresses on subjects pertaining to health and sanitary matters have been met willingly. The State Department of Health is receiving stronger cooperation each year from the people generally, and especially from the school boards of this county. It would seem that the interest taken has been joint from the report submitted.

MONTGOMERY COUNTY.

Dr. H. H. Whitcomb, C. M. I.

I herewith submit summary of work done in Montgomery County during the year 1915.

Of the reportable diseases, nine hundred fifty-two cases were reported during the year; 668 reports of placarding (Form 36) and 668 reports of disinfection (Form 37) were received from the eleven district health officers. The following are the diseases with which the county medical inspector had to deal:

Diphtheria: Seven dairy farms where the disease existed were personally inspected and arrangements made for the sale of milk. In one dairy the sale of milk was discontinued until quarantine was

lifted; in the others sale was permitted only on condition that persons living outside the infected house handled the milk. I investigated an outbreak at Lansdale where I found the main cause of the spread of the disease was carelessness on the part of the doctors in not diagnosing the disease early or at all. I advised that the board of health require all suspected cases to be quarantined until a bacteriological examination proved the case not to be diphtheria.

Typhoid Fever: Ninety-five cases were reported in the county, Franconia Township having the largest number of cases, twelve. I investigated the sale of milk on nine dairy farms, in all of which arrangements were made to have the milk handled by persons not entering the infected dwelling. Four dairies in the vicinity of Glenside were inspected on account of suspected infection from cases of typhoid in Philadelphia, but no evidence of typhoid was found. Outbreaks were investigated at the State Hospital for the Insane (Norristown), at Upper Telford, West Point, in Franconia Township, at Collegeville, in Cheltenham Township, and in Jenkintown. I also investigated a family outbreak at Washington Square, East Norriton Township; this outbreak was traced to infection from a case occurring in the Skippack epidemic during the fall of 1914.

I investigated measles in Worcester, Plymouth and Upper Dublin Townships; mumps in Limerick and Linfield Townships; chicken pox in Upper Dublin Township; and scarlet fever in Plymouth Township.

On August 9th I was called to Skippack to establish the diagnosis in a suspected case of smallpox. Case proved to be smallpox, and absolute quarantine was established. All contacts were vaccinated and no other cases were reported. This was the only case of smallpox reported during the year. I examined two suspected cases, one at the Montgomery County prison, the other in Norristown, but found them both to be chicken pox.

The boroughs of Collegeville, Conshohocken and Pennsburg were reported for not making the required returns to the Department. I visited these boroughs, and in each instance called on the president of councils, who promised to see that their boards of health did more effective work and that their reports were sent in promptly as required by law.

Statistical Summary of Work Done During the Year.

Forms 36 received,	668
Forms 37 received,	668
Dairy farms inspected for:—	
Typhoid fever,	23
Smallpox,	1
Diphtheria,	7
Stock transferred on dairy farms,	20
Sale of milk stopped,	3

Cases examined alleged to be:—	
Smallpox,	3
Typhoid fever,	13
Diphtheria,	3
Scarlet fever,	1
Chicken pox,	2
Whooping cough,	16
Measles,	2
Schools closed,	3

MONTOUR COUNTY.

Dr. Cameron Shultz, C. M. I.

Report of the county medical inspector of Montour County for the year ending December 31, 1915.

The epidemic of measles and chicken pox prevailing in Mahoning and Cooper Townships during the month of December, 1914, continued to prevail during the month of January, 1915.

Chicken Pox: On January 1, I inspected a family reported to have chicken pox and discovered four cases. This seemed to terminate the epidemic in the above townships until September 18, when I was notified of the supposed existence of chicken pox in Mahoning Township. Upon investigation found two cases in one family. On the following day, upon information of the health officer, visited a neighboring family and found one case.

September 22, I investigated a case in Cooper Township which proved to be chicken pox.

March 3, upon advice of Health Officer Robbins, I visited the village of Mooresburg, Liberty Township, and diagnosed three cases of chicken pox.

Measles: Measles continued during the month of January in Cooper and Mahoning Townships. Being called upon to investigate a number of homes, I found eleven cases in the district unreported—no physician in attendance. On January 6, I ordered the Mechanicsvill school closed until fumigated.

February 16, a case of measles was reported in Liberty Township by the health officer. I visited the family and discovered two children with the disease.

Mumps: Closely following the measles outbreak in Mahoning Township, mumps appeared, due to the fact that mumps was epidemic in Danville, and as this township is contiguous to the borough and quite thickly populated the spread was expected.

January 19, I investigated a report and found the disease quite manifest.

February 9, a report was received of the widespread existence of mumps in Valley Township. Upon investigation, I found a number of pupils as well as the teacher of Sidlers school victims of the disease. Ordered the school closed and fumigated. Homes of pupils and teacher placarded.

February 12, a case was reported in Mahoning Township without medical attendance. I visited the premises and ordered the house placarded.

February 17, upon the report of the health officer, I investigated a case of mumps in Cooper Township; again on the 23d and 24th. In each family I found a case and no physician in attendance.

February 28, I investigated the report of a case in Valley Township —mumps was found.

During March investigations were made in a number of families in Mahoning, Liberty, West Hemlock and Valley Townships.

April 2, upon report of health officer I visited a home in Valley Township and found a case of mumps. April 9, a report was investigated of a case in Liberty Township. Report confirmed.

April 12, upon information of a householder, visited Mausdale, Valley Township; found an adult with the disease and placarded his home.

May 20, upon the report of the health officer of the existence of a case of mumps in Liberty Township, I deputized Dr. E. A. Curry to make the investigation and he established the diagnosis.

The disease presented a large number of cases in adults.

Scarlet Fever: March 17, I got a report of Health Officer Patton of the existence of scarlet fever in the home of H. V., Mayberry Township, dairy farmer who sells milk and milk products in Shamokin, Northumberland County, and made the necessary investigation. The householder arranged to have the hired man take entire charge of the milking, and as a modern milk house near the house was used, the milk was separated and the cream taken to the adjoining farm and churned. Water for scalding the separator and cans was heated in the milk house. The patient being isolated, and being convinced of the extreme carefulness of the family, the milk being handled without coming into the house, the cans and utensils being properly scalded, the milker not coming in contact with the patient, nurse, or anything coming from the sick room, I considered the arrangement very good and allowed the sale to continue.

Scabies: February 15, upon information of the supposed existence of scabies in the Styers school, West Hemlock Township, I visited the school and found three children of one family afflicted. The patients were kept out of school until recovered.

Typhoid Fever: On August 27, I was notified of the existence of typhoid fever at the home of T. K., Limestone Township, who sold milk and milk products in Milton, Northumberland County. I visited the premises and as it seemed necessary that a member of the family attend the milk and churning in the house, they very willingly consented to discontinue the sale of milk and milk products. The patient was a visitor to this family from Iowa, and had previously visited in the borough of Danville, and was the probable source of infection in that place. The patient died.

About this time a number of cases were reported from the State Hospital for the Insane, situated in Mahoning Township. The matter was taken up direct with the Department by the superintendent of the institution, whereupon a representative of the Deparment re-

ported and took active measures to stamp out the outbreak, and locate the source of infection if possible. The outbreak developed into an epidemic of a hundred and thirty-four cases, mostly patients; a number of employes, however, fell victims. The source was uncertain, but in view of the fact that all that were down with the disease were fed from the main kitchen, led to the belief of a "carrier" in this kitchen. The detached kitchens were not affected. The milk and water supply was common to all kitchens. Compulsory inoculation with anti-typhoid serum was carried on very promptly to all patients and employes in the institution. A detailed special report of this outbreak appears elsewhere in this report.

September 4, a case was reported in the home of B. A. James, of Mooresburg, Liberty Township, who conducted a country store in the building in which he lived. Feeling that possibly butter and other milk products might be sold or shipped from this store, I visited the premises, but found the patient isolated and that no milk or milk products were handled in this store.

September 13, an employe of Vincent's dairy, after several days of malaise, was removed to the home of W. Q., in Mahoning Township, where a case already existed in the household in the person of an employe from the State Hospital for the Insane, who, when diagnosed as having typhoid, eloped from the hospital and was later located at this house. The owner was not selling milk or butter, and my visit was chiefly to procure a proper census of the case.

September 17, a case was reported in the home of Edward White, Mahoning Township, in the person of Mrs. K., wife of an employe, living in the White home. I visited the home in company with the Chief Medical Inspector, and as the quantity of milk and butter sold was not large, the sale was voluntarily discontinued. This case is supposed to have been infected in Danville.

During the outbreak in the adjoining township of Mahoning, Danville Borough also developed an epidemic numbering ninety-six cases. A report of the events in this borough is also given in another place. The board of health very kindly cooperated and made every effort to prevent any further infection.

Tuberculosis: During the year 1915 sixty cases of tuberculosis have been reported, fifty-three of which were cases in the State Hospital for the Insane.

Statistical Summary of Work Done During the Year.

Forms 34 received,	34
Forms 36 received,,	447
Forms 37 received,	251

Cases examined alleged to be:—

Diphtheria,	1
Chicken pox,	11
Mumps,	28
Measles,	16

Dairies inspected for:—

Scarlet fever,	1
Typhoid fever,	4

Sale of milk stopped on two premises.
Two schools ordered closed and fumigated.

NORTHAMPTON COUNTY.

Dr. Edgar M. Green, C. M. I.

During the year 1915, six hundred and thirty-five cases of infectious diseases were reported in Northampton County, made up as follows:—

Measles,	271	Mumps,	38
Tuberculosis,	4	Scarlet fever,	40
Erysipelas,	8	Whooping cough,	132
Typhoid fever,	37	Chicken pox,	51
Cerebrospinal meningitis,	2	German measles,	3
Diphtheria,	47	Pneumonia,	2

We regret to say that there is still a disposition on the part of physicians of the county not to report cases of tuberculosis. We hope that in another year something can be done to correct this error. No formal inspections were made during the year. Dr. Hull, from the Harrisburg office, made a visit to Moore Township to investigate the epidemic of whooping cough. We think that his visit to that district did much good by bringing the people to realize that the Department is keeping a close watch upon the work which is being done in the county.

NORTHUMBERLAND COUNTY.

Dr. R. H. Simmons, C. M. I.

The following is a summary of work done in Northumberland County for the year 1915:

Typhoid Fever: Forty-two cases of typhoid fever were reported. The highest number, twenty-four, occurred in Gearhart Township on account of the outbreak in Danville, Montour County, across the river.

Diphtheria: Total number of cases reported thirty-five, Mt. Carmel Township having the highest number, thirteen.

Scarlet Fever: Sixty-two cases were reported, Ralpho Township having the highest number of cases, twenty-four.

Measles: One hundred and fifteen cases were reported. Several schools were closed until they were thoroughly cleaned and fumigated.

Whooping Cough: Seventy-five cases were reported.

Mumps: Ninety-three cases were reported.

Chicken Pox: Twenty-four cases were reported.

There were a number of requests for disinfection for pneumonia and tuberculosis, which proved to me that the people appreciate what the Department is trying to do for them.

Made frequent trips to Watsontown Borough during November and December, to assist the board of health to control an outbreak of scarlet fever.

Statistical Summary for the Year.

Forms 36 received,	459	Examined cases alleged to be:—	
Forms 37 received,	439	Chicken pox,	12
		Diphtheria,	1
Dairy farms inspected for:—		Mumps,	26
Diphtheria,	3	Whooping cough (orphanage),	30
Scarlet fever,	1	Scarlet fever,	1
		Measles,	2

PERRY COUNTY.

Dr. A. R. Johnston, C. M. I.

As county medical inspector, I present the following report of the work done in Perry County during the year 1915, by the representatives of the Department of Health:

The total of communicable diseases reported this year was sixty-nine, three less than the number in 1914, three hundred and eighty-four less than in 1913, and one hundred less than in 1912.

There were no cases of measles reported this year, while the number reported in the previous year was two, and for the year 1913 the number was 453.

Thirty-three cases of typhoid fever were reported during the year, eleven of which were in S. W. Madison and the others pretty evenly distributed over the county. All but four of the twenty townships reported cases.

Fourteen cases of diphtheria were reported from eight of the townships, Penn and Wheatfield having each three cases and the others less.

Four cases of whooping cough were reported, three of which were in Penn and one in Centre.

Four cases of mumps were reported, two in Penn and two in Watts Township.

Seven cases of tuberculosis were reported from four townships.

Three cases of scarlatina were reported, Centre, Oliver and Tuscarora each having one.

Four cases of chicken pox were reported, Penn and Watts each having two.

One case of pneumonia was reported from Carroll Township, and one case of erysipelas from Rye.

There were no cases of communicable disease reported from Miller Township. There were twelve from S. W. Madison, twelve from

Penn, six from Carroll, six from Wheatfield, four from Tyrone, four from Tuscarora, and smaller numbers from each of the other townships.

Three dairy farms were inspected on account of typhoid fever. Two arranged to have persons outside the house in which the patient was domiciled take charge of the dairying, and one went out of the dairying business.

One case of chicken pox, alleged to be smallpox, was examined.

Sixty-nine Forms 36 were received and fifty-eight Forms 37.

Two new health officers were instructed.

PIKE COUNTY.

Dr. Wm. B. Kenworthey, C. M. I.

I wish to report work done in Pike County during 1915, as follows:

Of the reportable diseases, only fifty-seven cases were reported in the county during the year, as follows:

Measles: Forty-six cases were reported, all of these occurring in Lehman Township where there was a general epidemic of the disease during March and April. On April 8th I made an investigation and quarantined twenty-four cases that had no physician. No cases were reported from any other section of the county.

Diphtheria: Six cases were reported from scattered sections of the county, three being from Lehman Township, and one each from Lackamaxon, Palmyra and Westfall Townships.

Whooping Cough: Two cases were reported, one each from Dingman and Lehman Townships.

Scarlet Fever: One case was reported.

Tuberculosis: Only one case reported.

On receipt of a complaint from the Department of a citizen of Matamoras Borough, stating that quarantine regulations for scarlet fever were not being enforced, I went to Matamoras, called on the health officer and went over the conditions with him. Upon careful investigation of the case of scarlet fever referred to, I found that the board of health was complying with the laws to the best of its ability, and that the rumors with regard to violation of quarantine were unfounded, due perhaps to a misunderstanding regarding the wage-earner's permit issued to the wage-earner of the family under certain conditions.

POTTER COUNTY.

Dr. E. H. Ashcraft, C. M. I.

In making my annual report I am pleased to say that we have had comparatively few cases of contagious diseases during the year 1915. A few scattering cases of diphtheria, scarlet fever, measles, mumps and chicken pox occurred, but in no locality have they prevailed epidemically.

These cases generaly were quiet mild, and all in the rural districts where it is hard to tell when and where these cases start. They are apt to be so mild that no physician is called, consequently no diagnosis is made until the disease has spread over a considerable locality or some one of the patients becomes so sick that a physician is employed, and then a diagnosis is made, and only then can the Health Department act.

There has been a notable decrease in typhoid fever and tuberculosis. There were but seventeen cases of the former reported to this office during the entire year and three of the latter. This speaks volumes for the efficiency of the Health Department, when but a few years ago there were hundreds of cases of typhoid fever annually. But typhoid fever is always reported, and the public have become educated in the manner of preventing contagion to that extent that it has become a rare disease.

People are observing quarantine better than they did a few years ago, and the family who does not strictly observe quarantine is so criticised by the neighbors as to make negligence very unpopular.

SCHUYLKILL COUNTY.

Dr. J. B. Rogers, C. M. I.

Summary.

Forms 37 received,			614
Forms 36 received,			592
Examined cases alleged to be:—		Dairy farms inspected for:—	
Smallpox,	2	Diphtheria,	7
Typhoid fever,	3	Typhoid fever,	3
Chicken pox,	47	Scarlet fever,	5
Whooping cough,	71		
Measles,	51	Sale of milk stopped from premises,	10
Mumps,	11		
Pneumonia,	2		
Diphtheria,	6	Schools ordered closed,	7
Scarlet fever,	1	Reasons: chicken pox, whooping cough and scarlet fever.	
Impetigo contagiosa,	4		
Miles traveled by livery—C. M. I.,			491
Miles traveled by livery—Deputies,			577
Miles traveled by railroad—C. M. I.,			84
Health officers instructed at office,			4
Investigations in boroughs under health boards,			7
Prosecutions,			2

Schuylkill County embraces about seven hundred and seventy-seven square miles of territory, divided into twenty-nine boroughs and thirty-six townships, with a population of about 208,000 according to the 1910 census. The total population of the townships outside of the borough limits is approximately 80,000. Adding to this the borough of Girardville, which has been under the jurisdiction of the county medical inspector for the past few years, we have a total of about 85,000 people directly under this office, a large percentage of which are foreign born. Much of this population lives in small mining villages where the sanitary conditions as a rule are such that the spread of communicable disease is aided rather than retarded.

It is not our intention in this summary to treat the cases properly reported by a physician, as the office of the Health Department at Harrisburg has full data concerning such cases, but it is our purpose to give a general summing up of the inspections, etc., that were made through this office with reference to such individual cases or epidemics as will be of interest or instructive because of some unusual feature or incident, or such cases as clearly illustrate the worth of the restrictions imposed by the health laws. They will be separated under the headings of the various diseases and borough epidemics, prosecutions, dairy inspections, etc., which will all be treated separately.

Typhoid Fever: During 1915 there was a slight increase in the number of cases of typhoid fever in this county over the preceding year, due directly, in a large majority of cases, to the use of polluted water, although several cases were brought into the county from outside and they in turn infected others who came in contact. This office had no occasion to make any examination of typhoid fever suspects during the year except in Schuylkill Haven, which will be treated under the heading of "Borough Epidemics."

In October, 1915, your inspector visited Port Clinton Borough to investigate several cases of the disease, and there found the afflicted families using water from a spring that was, to say the least, very suspicious looking, and they were, of course, given the proper instructions as to the use of the water.

I also had occasion to make an investigation in North Union Township where there were eight cases of typhoid fever in one family, the object of my visit being to discover the source of the disease, which I believed to be the use of impure water from the well, as several relatives living in other parts of the county who visited this family drank the water and contracted the disease a week or ten days later. These people were in very poor circumstances, and I took the matter up with the Schuylkill County poor directors to have them give this family needed assistance.

There were about a half dozen cases in the Mahanoy Valley, in East Mahanoy and West Mahanoy and Butler Townships, and during October, I made a general investigation through this section with a view of discovering the source of infection. While practically all of the afflicted families used water from a public supply, the general sanitary conditions of the villages in which they resided was very poor and would seem to have something to do with the outbreak, as no other history of infection could be established.

During November I also made an investigation in Tower City Borough, where quite a serious epidemic occurred about a year previous. This trip will be treated under the heading of "Borough Epidemics."

It is the custom of this office as soon as a report of a typhoid fever case is received, at once to make inquiry as to the source of the water supply and its condition, and by following up information received in this way, with an inspection of the premises and analysis of the water, we have found that polluted water was being used by a number of families where typhoid fever existed, and thus, by knowing the source of the disease, have been able to take steps to prevent further cases from the same cause.

At the request of the Department, I made two inspections in Pottsville with a view of ascertaining the source of typhoid fever. There were only isolated cases and no further developments took place. (See "Borough Epidemics.")

There was an epidemic of typhoid fever in the borough of Mt. Carbon just outside of Pottsville during September, and I made a number of visits to this town with a view of checking the spread of the disease, and discovered that a spring used as a sort of public supply in this borough was very badly polluted. Further details will be given under the heading of "Borough Epidemics."

Scarlet Fever: Only one case alleged to be scarlet fever and not under the care of a physician was reported to this office during 1915, and upon examination by a deputy no diagnosis of scarlet fever could be established. In a severe disease of this kind, a physician is practically always called in, who, of course, reports the case in due form, and there is no necessity for action on the part of your inspector, although we are constantly on the alert for mild cases which by reason of their mildness are so often the cause of a large epidemic. There was no epidemic of scarlet fever in any particular locality under the jurisdiction of this office, only scattered cases reported from time to time by various physicians. One school in Porter Township was ordered closed for this disease, but this will be treated under the heading of "Schools Closed." The disease also occurred on five dairy farms, and this work will be treated under that heading.

There were several cases of scarlet fever on premises from which foodstuffs, etc., were being sold, and in each case brought to our atten-

tion the regulations of the Department of Health were carried out until quarantine was removed, and there was no trouble in any instance over such action, although the owner of one store in West Mahanoy Township decided to close the store rather than submit the customers to any danger of infection. The disease also existed in the family of a barber in West Hegins Township, and he was requested to take a disinfecting bath, have his clothing disinfected and take up his residence elsewhere with adults in order to keep the barber shop open, until the removal of quarantine.

Diphtheria: Practically the same conditions existed in this disease as in scarlet fever, no serious epidemics taking place in any particular locality. Three cases alleged to be diphtheria and not under the care of a physician were inspected by this office or by deputies during the year, all cases being in one family, in West Mahanoy Township. Your inspector examined two cases in the Schuylkill County almshouse at the request of the physician there, and we had a deputy make an examination of another case in Rush Township as a result of a dispute over the diagnosis between two attending physicians, the latter three cases being cited merely to give an idea of the varied character of the work of a county medical inspector.

Seven dairy farms were inspected on account of this disease (see "Dairy Inspections"). It was not necessary for this office to order any school closed during the year on account of this disease.

Two inspections were made by our inspector to investigate quarantine violations in cases of diphtheria, one in Blythe Township and one in Norwegian Township. In the former inspection the disease was on the premises of a foreigner in Cumbola and the patient died, but owing to the attitude of the householder we placed the premises under absolute quarantine until after the funeral, having a day and a night guard for several days, and these guards prevented any infractions of the quarantine regulations. In the latter case, in Norwegian Township, the patient had also died, and upon my explaining the regulations of the Department, the householder promised to follow them in every respect and we had no further complaint from this source.

Smallpox: During February, I received word of a suspicious case, thought to be smallpox, in East Norwegian Township, but upon thorough investigation, was not able to establish any diagnosis whatever. Whenever this disease is suspected to exist, immediate action is at once taken and drastic precautions are instituted without delay.

I am very glad to report that this county was very fortunate as regards this disease, but one case occurring during the year that came under the jurisdiction of this office, and I have no information of any other cases in the county during the past year.

On December 25, Dr. Beale, of Coaldale, called me by telephone, stating that on Friday, December 24, Dr. Shifferstine, physician in charge of the Coaldale Hospital, had sent a man to the dispensary of the Coaldale Hospital suffering from what he believed to be smallpox. Dr. Shifferstine, according to Dr. Beale, directed the patient to go over the hill to Dr. Beale's office in the centre of Coaldale Borough, and he called Dr. Beale on the telephone, Mrs. Beale answering, stating that he had sent the man suffering with smallpox to the office of Dr. Beale and that he was on the way at that time.

I received no word from Dr. Shiffenstine, and on December 28, I visited the Coaldale Hospital, saw Dr. Shifferstine and asked him what he knew of the case. He told me that the man had come to the dispensary and was seen by Dr. Weaver who sent word upstairs for Dr. Shifferstine to come down and see this patient, O. B. by name. Dr. Shifferstine told me that he went down, examined the patient and found that he was suffering from smallpox and that he directed him to go to the office of Dr. Beale for treatment. I went from there to the office of the Lehigh Coal and Navigation Company at Lansford, having learned through Dr. Shifferstine that the Lehigh Coal and Navigation Company police were trying to locate this suspected case of smallpox. The officials of the company told me that their men were working on the case, but up to that time had not been able to locate him. I went over the case with the officials of the above company, and they promised to lend any aid they could to both myself and the Department to apprehend this man, and stated that both their men and machines were at my service, and they also expressed a great deal of surprise that Dr. Shifferstine would deliberately turn this man at large. On December 29, I called upon the State constabulary to assist me in locating this man B., and on the evening of the same day received word from Dr. Beale that the State police had located the man in Coaldale and that he and Dr. J. H. Young had examined the patient and believed him to be suffering from syphilis and not smallpox. I notified Dr. Hull, who was in Pottsville at the time, and the next moning, December 30, Dr. Hull and I went to Coaldale, examined the man and agreed that he was suffering from syphilis and not from smallpox. A specimen of blood was taken and sent by me to the Department Laboratories for examination, but the specimen was unfit for that purpose. I have made several attempts to locate the man since and also had Dr. Beale try, but we were unable to find him and from what we hear believe that he moved to Philadelphia.

There is nothing further to report concerning smallpox for the year.

Chicken Pox: Forty-seven cases alleged to be chicken pox were examined by the county medical inspector and deputies during 1915, although but one serious epidemic occurred in East Brunswick Town-

ship during March, 1915, twenty-three cases being discovered through the inspections by this office, and as a result two of the McKeansburg schools in East Brunswick Township were closed and disinfected. The Christ Church Sunday school at McKeansburg and the United Evangelical Sunday school at Drehersville were both closed and disinfected by our health officer on account of this disease owing to the fact that contacts had attended Sunday school.

Measles: A total of fifty-one cases alleged to be measles were examined by this office and deputies during 1915, a large majority of them being voluntarily reported by the householders on Forms 34. This disease has usually been more prevalent each year since the establishment of this office. Only one epidemic of any consequence was handled by this office during the year, that in Butler Township, in October, but with the prompt work of our deputies all the cases were quickly placed under quarantine and there were no serious results. It was not necessary during the year to close any schools on account of this disease, although, as usual, the largest number of cases occurred during the months school was in session.

Mumps: Only eleven cases alleged to be mumps were investigated by this office during the year, the majority of them being also voluntarily reported by the householders, but owing to the mildness of this disease and the fact that it is very lightly regarded by a large number of people, there probably were a number of cases not under the care of a physician which were never brought to the attention of this office in any manner.

During March your inspector had occasion to make an investigation in Cressona on account of the failure of a physician to report cases of mumps, and the full details were included in the report sent to the Department of Health at that time.

Whooping Cough: Seventy-one cases of this disease were inspected under the direction of this office, all of them being in Upper Mahantongo Township in March and April. The total disregard of any precautions whatever by the householders and the school officials generally in that section accounts for the large number of cases. Practically all the cases occurring in this epidemic were disclosed by the work of our inspectors, very few cases having been reported in the regular manner by physicians, due to the fact that this disease is not taken seriously by most persons and they do not call in a doctor. It was necessary to close two schools in the township on account of the epidemic in question, and some trouble was encountered with the householders in enforcing quarantine regulations. The section of the country in which this epidemic occurred is probably the most indifferent of any as far as health regulations are concerned and our health officer for this district has always had considerable trouble in carrying out the regulations of the Department.

Impetigo Contagiosa: Four cases of this disease were examined by our deputies among school children, one in Washington Township and three in Girardville Borough, the case in Washington Township being diagnosed as scabies, and the proper restrictions concerning school attendance were enforced in each case.

DAIRY INSPECTIONS.

Typhoid Fever Cases: Three dairy farms were inspected for typhoid fever during the year, one in North Manheim Township, one in Pine Grove, and one in Barry Township, the sale of milk and its products being prohibited in all the three cases until the removal of quarantine. In each case of typhoid fever the condition of the water supply was looked into and the proper recommendations made to the householder to avoid contagion from this source. In the case in Barry Township, although the surface conditions of the water supply were very poor, the analysis did not show any bacilli coli. It was later found that a son of the householder where the disease existed had arrived home after a convalescence from typhoid fever contracted outside of this State, and shortly after his coming to the home of his parents the outbreak of the disease started. The people were also given instructions as to cleaning up the premises, and the school water of the Weisample school in the immediate vicinity was tested and found to be polluted and the proper instructions were given the authorities.

Scarlet Fever: Five dairy farms were inspected for this disease. One in Washington, one in West Penn, one in Mahantongo, and two in Hegins Township. The sale of milk and its products was stopped in two cases and allowed to be continued in three cases under the restrictions provided by the Department of Health in such cases, the value of which is indicated by the fact that no further cases resulted.

Diphtheria: Seven dairy farms were inspected for this disease during 1915, one in North Manheim, one in East Norwegian, one in Hegins, one in Hubley, and three in East Brunswick Townships. Sale of milk and its products was prohibited until the removal of quarantine in six cases, and a neighbor took charge of the milking, sale of milk, etc., in the other cases, under the restrictions provided by the Department in such cases, and there was no further trouble from any of the dairies. In dairy inspections of this nature whenever the sale of milk and its products constitutes a large portion of the activities of the householder, we endeavor to make arrangements to have the sale of milk continued under the regulations and restrictions of the Department, but where such sale is only casual or but a small part of the family income, we prohibit the sale of milk and its products until the removal of quarantine, and in this way no hardship is inflicted upon the families under quarantine.

SCHOOLS CLOSED.

Under this heading it is our purpose to give a short account of the closing and disinfecting of certain schools by order of this office on account of contagious diseases among the pupils.

Seven schools were ordered closed and disinfected by this office during 1915, and the attached statements show the locations of the schools and the reasons for the action taken. It was not found necessary to close any school during the year 1915 on account of measles, due, to a large extent, to the fact that we were unable to secure definite information of the attendance at school of measles patients or contacts after the date of onset, although there were undoubtedly instances in which this action was advisable.

It may be noted, however, that householders are beginning to awaken to the danger of allowing their children to attend school while afflicted with contagious disease or come in contact with children who are afflicted, and we have found some cases during the year that were not under the care of a doctor, but where the householder kept the children from school as soon as the onset of the disease was seen, and this also accounts, to a certain extent, for the few schools closed during 1915 in comparison to former years. I am also glad to note that the use of the common drinking cup and bucket is practically done away with and that sanitary drinking fountains are being installed in a number of schools and that in others the children are required to bring individual drinking cups.

We still have trouble, however, with the teachers of rural schools, owing to the fact that they are not acquainted with the health laws and permit flagrant violations of quarantine from time to time. In fact we even have records of several teachers who were afflicted with contagious disease but would not call a physician in and returned to school after an absence of a few days. As a general rule, the school boards in this county are willing to cooperate in every respect with the orders from this office, but we still have some directors who consider it an unnecessary trouble to disinfect a school, although I am glad to say these cases are becoming scarce. While it is true that some teachers have permitted children to attend school when contagious diseases such as measles or chicken pox could be seen on the pupils, without taking any action whatever, it is also true that a large number of teachers have sent such children home and at once reported the suspicious case to our health officer.

I am glad to say that in every instance during the year where we ordered a school closed and disinfected, our instructions were promptly complied with, and I believe it is only a question of time until the school officials will take such action immediately upon learning of contagious disease in their schools. In fact this happened in several instances during the last year where we issued orders from

this office to close the schools and were informed by our health officer that the school board already had the schools disinfected by our own health officer.

BOROUGH EPIDEMICS.

Girardville: This borough is still under the jurisdiction of the Department of Health, no attempt having been made to organize a board of health, and more cases of communicable disease were reported during the year from this borough than from the remainder of the district covered by our health officer. One inspection was made during the year 1915 for impetigo contagiosa, and the proper instructions were issued at that time to the school officials as to school attendance.

There were no features of special interest in this borough except the fact that contagious diseases seem quite prevalent in comparison with other towns of a corresponding population, due principally to the large foreign element in that town and the fact that they never had a really active board of health and are very backward as far as health regulations are concerned. We have not been able to obtain any definite evidence of quarantine violations or information that any patients or contacts attended school after the date of onset, although we have instructed our health officer to pay particular attention to matters of this kind in Girardville Borough.

Schuylkill Haven: During the year it was necessary for your inspector to investigate three cases of supposed typhoid fever in this borough, but a thorough examination did not establish a diagnosis of typhoid fever.

There was also quite an epidemic of measles in this borough during the latter part of the year, and I had occasion to take up several matters in connection with this epidemic with the board of health, but found them somewhat antagonistic and apparently not desirous of having the cooperation of this office. The disease was finally checked after quite a large number of cases were reported. In fact it would seem as if it died out naturally rather than from any action of the board of health.

Orwigsburg: Quite a serious epidemic of measles occurred in this borough during December, and at the request of the Orwigsburg board of health and by order of the Department, I made a number of visits to this town to cooperate with the board of health in combating the epidemic, and gave the board of health full instructions as to the methods to be pursued and found them more than willing to do anything necessary, lacking only the proper understanding of what actually should be done. I impressed upon them strongly that it would be necessary to punish any breaking of quarantine regulations, and I understand that two offenders were brought before a justice of the peace and after apologizing to the members of the board were

let off with a warning, and that this seemed to have an excellent effect upon other quarantined families. I kept in close touch with the Orwigsburg health officials during the entire period of the epidemic and received a number of telephone calls and visits from health officials, and each time gave them full instructions on the various questions submitted. The schools, moving picture theatres, etc., were closed, and I am glad to say the epidemic was practically confined to the month of December, and the number of cases showed rapid decrease as soon as the board of health started to work intelligently.

Mt. Carbon: During September, 1915, an epidemic of typhoid fever took place in the borough of Mt. Carbon just outside of Pottsville, and the board of health referred the matter to the Department which in turn communicated with this office, and on the 21st of September I made a thorough investigation, securing specimens of water from several private springs and from one spring that was the source of a public supply on the main street from which a number of people procured drinking water, among them being several of the patients.

At the time of my investigation there were six cases of the disease in this small borough, and an analysis of the water samples secured showed that the water in the public spring was badly polluted. On September 27, I attended a meeting of the Mt. Carbon board of health and communicated to them the result of my several investigations, and it was decided to have the public spring in question boarded up as well as the other springs on private premises.

There was considerable discussion in this meeting, the owner of one of the springs causing most of the trouble, and it was learned that he was very careless about the sanitary conditions of his own premises, so that the board refused to heed his complaint, particularly as all the recidents had access to the borough water supply. After explaining the powers and duties of a board of health, they promised to follow out all recommendations given, and I am glad to say that the spread of the disease was thoroughly checked and we had no further trouble of this kind in that borough during the year.

Frackville: During July your inspector attended a meeting of the board of health of this borough with a view of taking up with them the alleged quarantine violations in that town, and thoroughly explained to the board their powers and their duties and urged the carrying out of all regulations to the letter. I found the health board very eager to do whatever was right and they promised to follow out the recommendations given. There has been no further complaint from this source since that time.

Tower City: During November several cases of typhoid fever occurred in Tower City Borough, and by order of the Department of Health your inspector made an investigation in this borough in order to take prompt steps to prevent a repetition of the very serious epi-

demic that occurred in this place the year before. I found the disease on the premises of a man who was employed on a butcher wagon and who had been employed in this manner during the entire period of illness, and I strongly recommended to the board of health that they prohibit the continuation of the sale of meats, etc., by this man until the removal of quarantine. I also gave the Tower City board of health thorough instructions as to their powers and duties, urging them to take prompt steps in all cases in accordance with the health laws so as to stop any threatened outbreak before it got any headway, and I am glad to say that the disease was confined to a few scattered cases without any serious results.

Cressona: During March your inspector learned of several cases of erysipelas and mumps in this borough that had never been reported by the attending physician. A thorough investigation confirmed the original information, and full particulars were forwarded to the Department which in turn took the matter up with the offending physician.

Pottsville: During the year 1915 I made two inspections in this borough concerning typhoid fever with a view of discovering the source of infection. One inspection during September disclosed two patients on the premises under quarantine, and the only possible source shown by the history was the fact that one of the children had been to several picnics at various places during the previous month and on each occasion drank water from springs located near the picnic grounds. During October I made another visit to a typhoid fever case in the borough of Pottsville for the same purpose, and the only information obtained was that the patient two weeks before taking sick had visited friends in South Bethlehem.

PROSECUTIONS.

Mumps: During May a Mr. W. H. Z., of East Brunswick Township, physically interfered with our health officer while attempting to placard the premises for a duly reported case of mumps and made serious threats against the officer. Owing to the fact that there is considerable trouble of a similar nature in this section, it was decided, after a conference with the Department, to prosecute the offender, which was done on May 15, 1915, and he was found guilty and fined fifty dollars and costs. As he was in very poor circumstances and promised to avoid any similar action in the future, the fine was remitted and he paid the costs in the case.

Diphtheria: During the same month the premises of P. M., in Foster Township, were under quarantine for diphtheria, and complaint was made by a neighbor that quarantine was being flagrantly violated in such a manner as to expose the neighbors to infection. After going over the evidence and submitting it to the Department,

it was decided to prosecute the offenders in this case, as the violations were deliberate and in the face of warnings issued by our health officer. The householder and his father and a friend, all of whom took part in the violations complained of, were arrested, and at a hearing on May 15, 1915, were found guilty and the householder was fined fifty dollars and costs, the other two defendants paying the costs. Full particulars of each case were forwarded to the Department and considerable newspaper publicity was given to the affair, and we had no further occasion during the year to prosecute any violators of quarantine. I am hopeful that the several prosecutions in this county will have a salutary effect on any other would-be offender, although there are still certain sections of the county where a lesson of this kind is badly needed.

GENERAL REMARKS.

The foregoing brief report serves to show in a condensed form the activities of a county medical inspector and gives an excellent idea of the increasing demand for an officer of this kind. I desire to point out that the fundamental principle we endeavor to follow in this county is to try to educate the people so they will see the benefits to themselves and their neighbors from a thorough enforcement of the regulations of the Department of Health and will endeavor to aid the Health Department rather than antoganize it.

Each year we have an increase in the number of householders who voluntarily report cases of contagious disease occurring on their premises not serious enough in their opinions to warrant the calling of a physician in, and which otherwise would not come to the notice of this office and consequently no quarantine would be in force, thus exposing others to the danger of infection, and this certainly closes one avenue for the spread of contagious disease. Naturally each year of service adds to the efficiency of a health officer, and I am glad to say that we have a number of efficient and energetic health officers in this county whose common sense and prompt action have done a great deal to decrease the spread of contagious disease. We have required of all our health officers in this county to insert on Forms No. 36 the date of last attendance at school of the patient and the other children in the family, which information can be obtained from the householder while placarding, thus requiring no additional expense to secure it, but which is of considerable value in preventing the spread of contagious disease, as we are thus enabled to tell whether the other children in the school have been exposed to infections and to take steps to prevent such school attendance from spreading the disease.

We are continually endeavoring to keep our health officers up to the mark by letters of instructions and, wherever necessary, by per-

sonal letters bearing upon certain individual cases, and I am very glad to say that we have very few occasions to call the attention of any of our older (in point of service) health officers to any neglect of duty.

While the majority of physicians endeavor to cooperate in every respect with the Department of Health and make prompt report of all cases of contagious disease, I am sorry to say there are some physicians who avoid such reporting whenever possible, and our health officers have been instructed to keep a constant lookout for cases of this kind. It seems that it certain sections of the county doctors who do not report cases to the health officers obtain more calls, because the houses are then not placed under quarantine, than a doctor who according to law satisfactorily reports all cases of contagious disease with the result that the premises are placarded and quarantine restrictions are enforced, but the doctors are loath to report any of the other members of their profession for cases of this kind, although it is the intention of this office thoroughly to investigate any charges of this nature that come to hand.

The several tabulated statements attached to this report show at a glance the work of the past year and can be supplemented at any time by full details of any inspection or action taken through this office, as it is not within the scope of this report to take up in detail the work during the year. Owing to the limited space we are compelled to omit many less important happenings and details and in some instances possibly leave out matters that might be of considerable interest.

I am glad to report as an outstanding feature of the past year that a very large majority of all cases of communicable disease coming under the jurisdiction of this office have been mild and the deaths from this source have been extremely few.

One of the greatest annoyances in this county is the large proportion of foreign element under the jurisdiction of this office, because a great majority of these people habitually violate the health laws, and I am of the opinion that it is done not so much on account of a misunderstanding of the laws and of our ways of living, but wilfully, using their familiar expression "no ferstha" as a cloak to shield and protect them.

Another condition most annoying and quite common is the misinterpretation of health laws by the family physician, given, perhaps in some instances, in good faith to the family, but on account of the long standing friendship existing between the good old family physician and his patients, those families in many instances prefer to be guided by their good friend rather than by an officer of the Department. Again, on account of the poor train service to some parts of our county, and none at all to others, together with the fact that

some portion of the territory can hardly be reached during the winter months on account of the condition of the roads, our work must largely depend upon the efficiency of our health officer. This is a very good reason, in our opinion, for employing and paying well men who are efficient and capable, men who will give more thought and on that account perhaps less time to the work, men who have not reached that time of life when, as some of the public seem to think, they are only fit for watchmen at the crossing, or health officers.

Again, we have another class of good people in Schuylkill County, well meaning and thrifty, who still adhere to the old idea of having their children contract any disease that the community in which they reside happens to be blessed with at any particular time.

On one of my recent visits, by order of the Department, to one of our boroughs where scarlet fever was quite prevalent and where the breaking of all health laws was far more prevalent, I was told by one of the local physicians that certain mothers, giving their names, had actually taken their children to the homes of others having sickness that their children might contract the disease and "be done with it while they were little."

I have occupied the position of county medical inspector less than one year, and in going over the work find many mistakes that I have made, and I feel it my duty to say that the greater part of the good that has been accomplished in this office was largely due to the minute instructions received from the various officials connected with the Department who have at all times given cheerfully of their knowledge pertaining to health matters. These instructions have been of untold value to me and I have given them to the people of our community as best I could.

May I take this opportunity of extending my congratulations to our General who has so successfully led our army in this battle against disease and its spread, and add that we were very happy to hear but not the least surprised that Pennsylvania received the prize at the Pan-American Exposition? It is a pleasure, indeed, yes an honor, we think, to be just a private in the ranks of any army with a leader such as ours.

DAIRY FARMS INSPECTED.

	Scarlet Fever.	Diphtheria.	Typhoid Fever.	Totals.
January,	1	0	0	1
February,	0	2	0	2
March,	2	0	0	2
April,	0	0	0	0
May,	1	0	0	1
June,	1	1	0	2
July,	0	0	1	1
August,	0	1	0	1
September,	0	1	0	1
October,	0	0	1	1
November,	0	2	0	2
December,	0	0	1	1
Totals,	5	7	3	15

SCHOOLS ORDERED CLOSED FOR VARIOUS DISEASES.

Townships.	Chicken Pox.	Scarlet Fever.	Whooping Cough.	Totals.
East Brunswick,	2	0	0	2
West Penn,	1	0	0	1
Porter,	0	1	0	1
Mahantongo,	0	0	2	2
Frailey,	1	0	0	1
Totals,	4	1	2	7

EXTMINED CASES ALLEGED TO BE:—

	Typhoid fever.	Smallpox.	Chicken pox.	Measles.	Mumps.	Whooping cough.	Scarlet fever.	Diphtheria.	Pneumonia.	Impetigo contagiosa.	Scabies.	Totals.
TOWNSHIPS.												
East Mahanoy,				3	9							12
West Penn,			9						2			11
Walker,			8									8
Frailey,			6									6
West Mahanoy,				9				3				12
Pine Grove,			1									1
East Norwegian,		1										1
Butler,				31								31
North Manheim,								2				2
Washington,							1				1	2
Rush,								1				1
East Brunswick,			23		2							25
Upper Mahantongo,						71						71
Schuylkill,				8								8
BOROUGHS.												
Girardville,										3		3
Coaldale,		1										1
Schuylkill Haven,	3											3
Totals,	3	2	47	51	11	71	1	6	2	3	1	198

INSPECTION OF CASES ALLEGED TO BE:—

	Smallpox.	Mumps.	Diphtheria.	Pneumonia.	Chicken pox.	Measles.	Impetigo contagiosa.	Typhoid fever.	Scabies.	Scarlet fever.	Whooping cough.	Totals.
January,	0	2	1	2	1	8	0	0	0	0	0	14
February,	1	0	0	0	4	0	0	0	0	0	0	5
March,	0	0	3	0	25	0	0	0	0	1	19	48
April,	0	4	2	0	10	0	0	0	0	0	52	68
May,	0	5	0	0	1	3	0	0	0	0	0	9
June,	0	0	0	0	0	0	0	0	0	0	0	0
July,	0	0	0	0	0	0	0	0	0	0	0	0
August,	0	0	0	0	0	0	0	0	0	0	0	0
September,	0	0	0	0	0	0	3	0	0	0	0	3
October,	0	0	0	0	0	40	0	3	0	0	0	43
November,	0	0	0	0	6	0	0	0	1	0	0	7
December,	1	0	0	0	0	0	0	0	0	0	0	1
Totals,	2	11	6	2	47	51	3	3	1	1	71	198

SNYDER COUNTY.

Dr. H. F. Wagenseller, C. M. I.

Following the estiblished custom, this, the annual report of your medical inspector for Snyder County for the year 1915, will be only a brief statistical summary grouped under proper headings of the detail reports sent in the course of the year.

In order properly to perform the duties of the office it has been found necessary at various times to visit six of the fifteen townships and one of the boroughs.

During the year thirty-one persons alleged to be suffering from communicable diseases were examined for the purpose of establishing the diagnosis. Morbidity reports were confined to eight of the diseases which the laws of the State require physicians to report to the health authorities as follows:—

Scarlet Fever: This disease was found in five townships and one borough. It was of such a mild type that no physician had been called and it was necessary for the county inspector to investigate the epidemic in Perry, West Perry and Chapman Townships to establish quarantine and order the schools to be closed and disinfected. Thirty-one cases of this disease were reported.

Typhoid Fever: This disease occurred in eight townships and one borough in the county. Twenty-six cases in all were reported, and the medical inspector was ordered to investigate the sanitary measures in force for one case living near a butcher shop.

Mumps: Sixteen cases of mumps were reported in this county during the year, most of them occurring in Monroe Township, all being very mild.

Diphtheria: Twenty-three cases of this disease occurred in nine townships of this county during the year. It became necessary for the medical inspector to go to Chapman Township and to Freeburg to make a diagnosis of suspected cases, and also to make two separate trips to Beaver Springs and Spring Township to investigate an epidemic at that place which had spread to quite an extent owing to the lateness of the diagnosis and report of the attending physician.

Erysipelas: But two cases were reported.

Whooping Cough: But four cases of this disease were reported, due, I think, to the dislike of the patient to acknowledge the disease.

Measles (and German Measles): Twenty-two cases of this disease were reported, and as many persons do not employ a physician for this disease it is remarkable that not more cases developed among the school children.

Impetigo Contagiosa: Impetigo contagiosa developed among the children in a Meiserville school, Chapman Township, and the medical inspector was hurriedly sent for to make the diagnosis, as smallpox was feared.

Education has always been our motto, and our aim has been always to secure the cooperation of the quarantined family and their neighbors by means of thorough explanations, and as a result they are beginning to look upon quarantine and disinfection as a measure for their future safety and the safety of their children instead of the hardship which they used to consider it.

During the year a hundred and fifteen requests for quarantine (Form 36) and ninety-five requests for disinfection (Form 37) were received from the three health officers in this county, and it is gratifying to see how uniform and careful these men have been in the discharge of their duties. It is gratifying to note that not a single complaint in regard to their action has reached this office during the year. The increasing frequency with which your county medical inspector has been consulted by health boards, school boards, physicians and citizens in general in reference to health and sanitary measures, shows in a practical manner the appreciation of the efforts of the Department in safeguarding the public health, and it is a source of distinct pleasure to your representative.

SOMERSET COUNTY.

Dr. C. P. Large, C. M. I.

Statistical Summary of Work Done During the Year.

Forms 36,	967	Forms 37,	592

Examined cases alleged to be:—

Typhoid fever,	10	Mumps,	142
Diphtheria,	14	Smallpox,	3
Scarlet fever,	81	Impetigo contagiosa,	58
Measles,	37	Tinea,	5
Chicken pox,	47	Scabies,	2
Whooping cough,	53	Ecthyma,	3

Somerset County has an area of about a thousand and fifty square miles and is divided into twenty boroughs and twenty-four townships. The population has increased somewhat during the year 1915 and is almost 70,000. That of the boroughs is about 25,000, leaving a population of over 45,000 in the townships under the supervision of your C. M. I. and thirteen health officers. Many of the boroughs are small and have no boards of health or inefficient ones. Some of them have no physician residing within their limits, hence a full board of health in these municipalities is impossible. In others the physicians living there are unwilling to serve on the boards.

During the year the State Department of Health has taken over the control of sanitary work in the following boroughs: Addison, Somerfield, Stoyestown, Ursina and Wellersburg. In all of these places a marked improvement in the condition of the borough has been apparent.

In my inspection work of the year 1915, I have visited twenty of the twenty-four townships and three of the boroughs, and have traveled a distance of 2,668 miles by railroad and 1,787 miles by driving.

In the course of the year 967 reports of placarding for communicable diseases were received from the health officers and 592 disinfections were reported.

Many of the diseases which are reportable under the law appear in the summary of my work that follows.

SUMMARY.

Typhoid Fever: During the year fifty-four cases of typhoid fever were reported; no cases in March and sixteen in October.

All seemed to be isolated cases except in Lower Turkeyfoot Township, where fourteen were reported. These cases were inspected and suggestions given to the householders which were received with eagerness, and results seemed to indicate that they were followed. In 1914 there were sixty-seven cases, which shows a decrease in 1915 of about twenty per cent.

Dihptheria: One hundred and sixteen cases were reported from fifteen townships and a borough under the supervision of the State Department of Health. Of these fourteen were inspected and diagnosed by the C. M. I. In 1914 two hundred and forty-three cases of diphtheria were reported, showing a decrease of about fifty per cent.

Scarlet Fever: A hundred and forty-two cases were reported from eighteen townships and one borough. Eighty-one of the cases were inspected and diagnosed by the C. M. I. Elk Lick Township had a total of sixty-nine cases, sixty-two of them being inspected during January, February and March. This epidemic was widespread in extent and of a light form. This is one of the border townships on the Mason and Dixon line, and there is much traveling to Maryland where the disease was contracted and brought over. It being of a light form a physician was called in very few cases. When your C. M. I. diagnosed the cases they were in every instance placed under the required modified quarantine and the serious possibilities explained to the householders. In 1914 ninety-two cases were reported, showing this year an increase of about fifty-four per cent.

Measles: Two hundred and five cases reported; thirty-seven of these were inspected by the C. M. I. A hundred and fifty-six of these cases were reported in the month of December. This epidemic oc-

curred in nineteen townships and had its origin the last week of November. A case broke out in Teachers' Institute at Somerset, the patient being a teacher who attended one of the assemblies during the eruptive stage. The result is self-evident.

In 1914 there were reported one hundred and forty-three cases, which means for 1915 an increase of about forty-three per cent.

Chicken Pox: Eighty-five cases reported; forty-seven were inspected and diagnosed by the C. M. I. In 1914 there were forty-nine cases, an increase of about seventy-three per cent. They occurred in twelve townships and one borough, June being the only month in which there were no cases reported.

Whooping Cough: A hundred and two cases were reported, of which fifty-three were inspected by C. M. I. and the diagnosis made. In 1914 a hundred and fifty-seven cases were reported, which shows a decrease of about thirty-five per cent. This disease was reported in ten townships.

Mumps: One hundred and ninety-six cases were reported, among which a hundred and forty-two were inspected and diagnosed by the C. M. I. This occurred in seven townships and three boroughs. In the month of April twenty-four cases occurred and fifty-two in March.

In 1914 eleven cases were reported. Very few of the cases were attended by physicians. Owing to this disease spread rapidly, the C. M. I. and health officers not being aware of its existence until the great prevalence.

In Addison Borough thirty-six cases were found in one day, none of these having been reported. The schools were closed and remained closed for a sufficient length of time.

Smallpox: Three cases were reported in Elk Lick Township. These were diagnosed by the C. M. I., and placed under absolute quarantine with day and night guards. These three cases were children who had never been vaccinated. All other members of family were vaccinated at once and did not contract the disease.

In 1914 twenty-five cases reported, so that 1915 shows a decrease of twenty-two cases.

Impetigo Contagiosa: Fifty-eight cases were reported in school by the C. M. I., and exclusion from school was required.

Ringworm: Five cases were diagnosed by the C. M. I. in school and were then excluded from school.

Scabies: Two cases were found and excluded from school by the C. M. I.

Ecthyma: Three cases were found and excluded from school by the C. M. I.

In January four inspections were made in Elk Lick Township and ten cases of scarlet fever were found and placed under quarantine. The schools were closed and ordered fumigated by the school board.

As the result of another inspection in Elk Lick Township ten more cases were diagnosed. And again on the 26th and 29th three other cases were found. In each instance the premises were placed under modified quarantine. The Springs schools were closed for two weeks, some of the cases having broken out in school; all of the pupils were contacts. The directors of the church (Mennonite) in the village of Springs were directed to keep the church closed two weeks.

The dairy farm of one of the homes where scarlet fever existed was ordered to market no produce until the premises had been fumigated.

January 5, I inspected mumps in Addison Township and diphtheria in Summit.

January 7, I inspected the East school in Conemaugh Township where pediculosis capitis was reported. Fifteen cases found in children of foreign parentage. All were excluded from school. Also one child with active pulmonary tuberculosis was sent home with a letter of advice, the parent to have child placed under care of family physician at once.

January 8, I inspected scarlet fever in Elk Lick Township. Ten cases were diagnosed and placed under modified quarantine.

January 10, I made an inspection in the Levansville school in Somerset Township for impetigo contagiosa and found some recovered cases. This inspection was made at the request of one of the school directors.

January 17, I made an inspection for scarlet fever in the family of J. A., in Elk Lick Township, but the result was a negative diagnosis.

January 18, I made an inspection in Milford Township and scarlet fever was diagnosed. This case had developed in the Walter school which was closed and the school board ordered to have it fumigated.

The sale of dairy products was stopped on a farm where scarlet fever existed.

January 21, I inspected two cases of chicken pox in Stoyestown Borough and refused the request of mothers to be allowed to take their children to Johnstown until after quarantine had been lifted.

January 22, I inspected scarlet fever in Larimer Township and placed two families under modified quarantine. I closed the Geiger school and ordered fumigation.

January 23, cases of diphtheria were reported in Fairhope. I made a positive diagnosis, ordered the houses placed under modified quarantine, and directed that the school be closed and the school house fumigated.

January 26, I inspected scarlet fever cases in Elk Lick Township and placed under modified quarantine a family attended by a physician from Grantsville, Maryland, who had not reported cases. A letter was sent to the doctor explaining the requirements of the Pennsylvania State Department of Health and also a small supply of morbidity reports for his future use.

January 29, I inspected cases of scarlet fever in Elk Lick Township and placed the premises under modified quarantine.

February 6, I made an inspection in Milford Township and found scarlet fever on a farm from which milk products were marketed. The premises were placed under modified quarantine and further sale of dairy products was stopped.

February 2, inspected five families in Larimer Township and established a positive diagnosis of mumps in seven cases. All the affected premises were placed under modified quarantine.

February 11, a positive diagnosis of mumps was made in Addison Township and the premises were placed under modified quarantine.

February 15, I inspected and made a positive diagnosis of scarlet fever in Larimer Township. Placed the premises under modified quarantine.

February 16, I inspected a family in Addison Township and made a positive diagnosis of mumps, and found also a case of scarlet fever. I closed the Silbaugh school and ordered that it be fumigated.

February 19, I inspected suspected cases of mumps in two families in Addison Township. A positive diagnosis of mumps was made in three cases and the premises were placed under modified quarantine.

February 22, I inspected a family in Elk Lick Township and made a diagnosis of scarlet fever. I placed the premises of the patients under modified quarantine. This was also done in three other families where children had been contacts. I closed the West Salisbury school and ordered fumigation.

February 25, I inspected two families in Addison Township and made a positive diagnosis of mumps in six cases. School exclusion ordered.

February 26, as the result of an inspection in Elk Lick Township, I made a positive diagnosis of scarlet fever for six cases in two families. The sale of milk was stopped and the school of West Salisbury was closed and ordered to be fumigated.

February 27, I made an inspection in family of a school teacher in Milford Township and found the teacher in active scarlet fever. I placed the premises under modified quarantine; closed the school and ordered it to be fumigated.

March 1, families in Larimer Township were inspected and a positive diagnosis of chicken pox was made in ten cases. School exclusion was ordered.

March 2, I inspected two families in Addison Township and made a diagnosis of mumps; the children were excluded from school and the premises placed under modified quarantine.

March 5, an inspection in Elk Lick Township led to finding eight cases of scarlet fever. The school was closed and ordered fumigated, and the premises were placed under modified quarantine.

March 11, I inspected family in Addison Township, and diagnosed one case of mumps. Modified quarantine was declared.

March 12, I inspected six families in Larimer Township and made a positive diagnosis of mumps in all six families including twelve cases. The premises were placed under modified quarantine and school exclusion ordered.

March 13, I inspected supposed cases of scarlet fever in two families in St. Paul, Elk Lick Township, and confirmed health officer's diagnosis. School exclusion was ordered.

March 19, I inspected and confirmed the health officer's diagnosis of mumps, two cases in Addison Township. School exclusion was ordered and the premises were placed under modified quarantine.

March 24, I inspected a family in Summit Township and found a well-developed case of diphtheria. I placed the premises under modified quarantine, stopped the sale of milk, and ordered the Keystone Mine school closed and fumigated.

March 25, after an inspection in Addison Township, I made a positive diagnosis of eleven cases of mumps and placed the premises under modified quarantine. I found teacher of Alta Mont school teaching and with mumps. I immediately closed the school, sent the teacher home, placed the home under modified quarantine and ordered the school house to be fumigated.

March 27, an inspection regarding an epidemic of mumps in Ursina Borough led to finding ten cases. The school was ordered closed and the building fumigated.

March 29, an inspection was made in Addison Borough, and thirty-six cases of mumps diagnosed. A canvass of every house in the town was made. The school was closed and fumigation ordered. All premises were placed under modified quarantine.

April 2, I made an inspection in Addison Township and found nine cases of mumps. The teacher of Fort Hill school was teaching school while having mumps. His school was immediately closed and he was sent home.

April 5, I inspected families in Greenville Township and found twenty cases of scarlet fever. All cases were placed under modified quarantine. I stopped the sale of dairy products and closed the schools and ordered fumigation.

April 6, I inspected five cases of mumps in Addison Township. I confirmed the diagnosis and placed the premises under modified quarantine. I ordered the school teacher to obtain board at another place, as she was then living in a household under modified quarantine.

April 8, I inspected a family in Shade Township and made a positive diagnosis of chicken pox in three cases.

April 9, I inspected a family in Addison Township and made a positive diagnosis of mumps in five members of it. The premises were placed under modified quarantine.

April 15, a diagnosis of mumps was made in three cases and one family in Greenville Township. The premises were placed under modified quarantine.

April 19, I made an inspection in Addison Township and confirmed the householder's diagnosis of mumps in thirteen cases.

April 20, I inspected three cases in Coal Run, made a positive diagnosis of smallpox, placed guards, and established absolute quarantine. Contacts were vaccinated and no other cases developed.

April 29, an inspection was made at Otterman Mines and five cases of diphtheria found. Conditions were such that an absolute quarantine was deemed advisable. Guards were procured and placed.

May 1, I inspected five households in Addison Township and confirmed the householder's diagnosis of mumps in eight cases.

May 24, I inspected a family of diphtheria contacts in Wellersburg Borough. I ordered all to have antiseptic baths and the premises to be fumigated, and advised the householder to have the family physician administer immunizing doses of antitoxin.

June 2, I inspected a case of supposed mumps in Addison Township and confirmed the diagnosis. The premises were placed under modified quarantine.

June 12, a similar inspection was made.

June 17, I inspected a herd of cattle in Larimer Township, in which some skin disease existed. The owner of the cattle was ordered to sell no milk until permission was granted by the Department of Health. This milk was used by an ice cream factory.

July 26, I inspected six cases of measles in Fairhope Township. A diagnosis was established and the premises were placed under modified quarantine.

August 9, I inspected suspects in Fairhope Township and made a diagnosis of measles in seven cases.

August 12, one case of measles was diagnosed in Fairhope.

August 16, I made a positive diagnosis of five cases of impetigo contagiosa in Addison Township.

August 18, I made an inspection in Addison Township and diagnosed seven cases of impetigo contagiosa.

August 23, an inspection was made in Upper Turkeyfoot Township in two families in which typhoid fever existed. I stopped the sale of dairy products and gave the usual directions concerning the precautions to be observed in such cases.

August 24, I inspected two farms in Fairhope Township and diagnosed measles.

September 3, I diagnosed impetigo contagiosa in four cases in Addison Township and directed the children to remain from school until recovered.

September 19, I made an inspection in Seanor, in Paint Township, and found thirty-six cases of whooping cough. All were advised to stay away from school until recovery and the fumigation of their homes. The teachers were given a list of the pupils' names and properly advised. The premises were placed under modified quarantine.

September 28, I made an inspection in Wittenberg and Pine Grove schools, in Larimer Township, and found five cases of ringworm and two of impetigo contagiosa. All were sent home and teachers directed to write a letter to each householder that the children were only to be returned following recovery.

October 5, I inspected a family in Larimer Township concerning which the teacher of the school had reported to the health officer that she suspected some contagious skin disease to exist there and had required the children to remain from school until a diagnosis was made. A diagnosis of rhus poison was made. I advised the teacher by letter of my diagnosis.

October 14, I inspected schools in Goodtown and Pine Hill, and Brothers Valley Township, and found chicken pox and impetigo contagiosa. I excluded all cases from school and ordered the homes of children who had chicken pox to be placed under modified quarantine. The two schools were ordered closed and fumigated.

October 15, I made an inspection in Lower Turkeyfoot Township and found several cases of scabies and impetigo contagiosa in the Draketown and Brushtown schools. I had the children sent home and directed the teachers to have them return after recovery.

October 16, I inspected a family in Larimer Township and diagnosed four cases of scarlet fever which had been attending the Sandpatch school. I placed the premises under modified quarantine, closed the school, and ordered the school house fumigated.

October 16, I inspected the Glen-Knor and Pine Hill schools and diagnosed chicken pox in both schools. I sent the children home and directed the health officer to place their homes under modified quarantine, and ordered the schools closed and fumigated.

October 18, I made an inspection in the Berwindino school in Paint Township and found nine cases of impetigo contagiosa. All were ordered to stay away from school until recovery.

October 24, I inspected a family wherein typhoid fever was in Addison Township and Fort Hill. I ordered further sale of dairy products stopped, and advised concerning sewage disposed and also water contamination.

October 30, I inspected three typhoid cases in Summit Township and found an apparently contaminated water supply. Advice was given and no further case developed.

October 31, I made an inspection in Lower Turkeyfoot Township and found two families with typhoid fever; five persons in one family had been removed to Markleton Sanatorium. In both cases the water supply was from springs. These were ordered cleaned, limed, ditched and fenced in.

October 31, I made an inspection at the request of the secretary of the school board at Brothers Valley Township in a family who sent children to the East End school and found one of the children ill with diphtheria. This child attended the school while ill. I ordered the school closed and fumigated and also placed the home of child under modified quarantine.

November 9, an inspection was made in the Lick Run school in Summit Township where one of the patrons of the school had reported to me that impetigo contagiosa existed. I found two of the pupils who probably had had the disease but who had completely recovered.

November 15, Dr. Carl Frantz (deputized) made inspection in the Listonburg schools and diagnosed several cases of whooping cough. The children were sent home and the homes placed under modified quarantine.

November 1, I made an inspection in the Newberry school in Addison Township and found two children in desquamation stage of scarlet fever, and also three others in a family nearby. I ordered the homes placed under modified quarantine and closed the school for ten days and ordered it to be fumigated.

November 30, I inspected the Keffer school in Conemaugh Township and diagnosed impetigo contagiosa in two pupils. I ordered the teacher to send them home until recovery.

This in a brief way summarizes the work done in Somerset County. Some of the work has been fraught with trying experiences, but on the whole it has been pleasant.

The antagonism which one used to meet seven or eight years ago is now almost eliminated. The education of the public in matters relating to public health is marked.

I want to thank all who have helped me during the year, not only the physicians of Somerset County but the health officers, also my superiors in the Commissioner's office.

SULLIVAN COUNTY.

Dr. J. L. Christian, C. M. I.

Report of activities of the county medical inspector of Sullivan County for the year 1915.

Forms 36 received,	32	Forms 37 received,	22
Diseases reported as follows:—		Compared with 1914 there were:—	
Diphtheria,	15	Diphtheria,	9
Measles,	13	Measles,	13
Whooping cough,	2	Scarlet fever,	4
Scarlet fever,	1	Erysipelas,	1
Typhoid fever,	1	Typhoid fever,	9

There was no epidemic in the county during the past year, and the general observance of quarantine by the people assisted in keeping disease under control. No special inspections were made, as no necessity arose.

SUSQUEHANNA COUNTY.

Dr. H. S. Lathrop, C. M. I.

The following is a report of the activities of the county medical inspector for Susquehanna County for the year 1915:

Scarlet Fever: In response to instructions, I visited Uniondale March 1 to investigate outbreak of scarlet fever and complaints of violations of quarantine regulations. I found that scarlet fever existed at four houses, and that there were in all seven cases. Some of the adult members of these households had visited public places, and in two instances dogs were allowed to run at large. I visited the four houses and directed that the quarantine regulations be strictly observed and received promises that they would be. The disease soon subsided—there were no new cases and no more complaints.

April 5, in accordance with instructions of the Chief Medical Inspector, I visited New Milford Township to investigate the disease at East New Milford. I found that from January 25 to February 20 there had been fourteen cases in seven different households, and that the disease started in the neighborhood with a family named Buck. They did not employ a physician, and though there was evidence that they had had the disease, would not allow the health officer to disinfect the premises. There was considerable feeling against the Bucks and apprehension of the spread of the disease. The Bucks, however, finally consented to have their house disinfected and this had a very satisfying effect on the community. There were no new cases after my visit.

Typhoid Fever: At a lumber camp in Dimock Township, where some fifteen men boarded, typhoid fever broke out in September, and by direction of the Chief Medical Inspector I investigated it. There were in all five cases, of which two were fatal. It appeared to have originated with a man who came there from a distance and had been in different localities. He was taken down with the disease soon after coming to the camp.

The surroundings of the camp were very insanitary and the buildings in which they lived dirty. The subsequent cases were evidently contracted from the man who came there sick. The camp was soon afterwards abandoned, the building torn down and the premises thoroughly cleaned up. No other cases have arisen.

There were only seven other cases in the county during the year.

All contagious diseases with the exception of measles, mumps, whooping cough and chicken pox have markedly decreased during the past few years.

Statistical Summary of Work Done During the Year.

Forms 36 received,	176
Forms 37 received,	160
Examined cases alleged to be:—	
Mumps,	1
Schools ordered closed: reasons:—	
Diphtheria,	1
Scarlet fever,	1
Health officers instructed at my office,	1
Elsewhere,	1

TIOGA COUNTY.

Dr. C. W. Webb, C. M. I.

Tioga County has an area of 1,142 square miles, and is composed of thirty townships in charge of fourteen health officers. There are eleven boroughs, eight of which have boards of health. The towns being small, the councils are slow to appropriate money to do satisfactory work. It was necessary to investigate matters at Covington and Tioga and secure the reorganization of the health boards in each borough. Elkland was put temporarily under township rules. Now application has been made by a recently organized board of health to have the town put back under borough regulations. It is my observation that the efficiency of the boards of health in the boroughs is greatly hampered by a lack of funds. It is to be hoped that in the near future the borough councils of Tioga County can be brought to a realization of the need of appropriations for this important branch of municipal work, and will bring their department up to the standard established by the State for the rural districts.

As to vaccination, our county superintendent of schools has been rather lukewarm in supporting it. However, with the exception of two or three townships, the school directors have given me and the teachers support, and nearly all the school children throughout the county have been vaccinated. There has been no smallpox in Tioga County during 1915.

The population of Tioga County is about forty thousand. During the year there were reported to me communicable diseases to the number of one hundred and seventy-two, representing twelve different diseases. The diseases are enumerated as follows:

Diphtheria: There were nine cases of diphtheria reported. Three deaths occurred, the patient being moribund in each case before the administration of antitoxin. The nine cases occurred in five different townships. Two cases were evidently contracted outside the county.

Whooping Cough: Thirty-four cases of whooping cough were reported, this disease being confined to three different districts. All cases were directly or indirectly contracted in school.

Mumps: Five districts reported mumps, there being in all twenty-seven cases.

Measles: Of this disease twenty-two cases have been reported, eight districts being represented. Many cases have doubtless occurred in families that have called no doctor for fear as they say of being "quarantined in."

Erysipelas: Four cases of erysipelas were reported, not more than two cases being found in one district.

Anthrax: One case of anthrax occurred at Elkland. The patient died.

Chicken Pox: Five health officers have reported chicken pox, the total number of cases being twenty-one.

Tetanus: One case of tetanus was reported from Richmond. The patient died in about three days.

Pneumonia: Only two cases of pneumonia were reported.

Scarlet Fever: Almost all of the cases of scarlet fever have been of a mild type. Twenty-seven cases have been reported, quarantined and disinfected. Every precaution has been taken to eradicate this disease. In several localities the day schools and Sunday schools have been closed, and the moving picture shows closed to children. Still, isolated cases have appeared. The difficulty of control, no doubt, has been due to the mildness of the cases, many families affected not only employing no physician but even concealing the nature of the slight illness of one or more of the members.

Typhoid Fever: Eighteen cases of typhoid fever have been scattered through eleven districts, not more than three occurring in any one township.

The most serious cases were found in Charleston Township. The drinking water from four different wells was sent away for examination. The colon bacillus was found in very small numbers.

Tuberculosis: Six new cases of tuberculosis that have not applied to the Dispensary have been reported.

UNION COUNTY.

Dr. Charles H. Dimm, C. M. I.

I respectfully submit the following summary of work done in medical inspection during year 1915:

Chicken Pox: February 5. At the request of Health Officer Sanders, Wehr's school was inspected for chicken pox. Two cases were found in the school.

On the same date I found two cases on premises of one Schroeder in Limestone Township.

April 3. At the request of the Department, I investigated the board of health of the borough of New Berlin. I succeeded in having a board regularly organized and it is now in good working order.

Measles: At the request of Health Officer McCurley, May 23d, I investigated one case of measles at West Milton and ten cases in White Deer Township.

November 4. At the request of the Department, I investigated the board of health at Hartleton, and failed utterly to effect an organization.

November 9. At the request of Health Officer McCurley, I inspected the Ramsey school and discovered several cases of impetigo contagiosa.

There were 299 Forms 36 received during 1915.

During the months of August, September and October there were no reports of contagious diseases received from the four districts of Union County.

VENANGO COUNTY.

Dr. J. B. Strayer, C. M. I.

I am pleased to make and forward you a summary of the work done by your county medical inspector and the health officers of Venango County for the year 1915.

The county was unusually free from communicable diseases at the beginning of the year. During the second and third months, however, outbreaks appeared throughout different sections of the county until late in the spring, then they subsided.

Scarlet Fever: During March and running on through April an epidemic of scarlet fever developed in the Institute for Feeble Minded Children at Polk. As this borough had elected to have the Department take charge of its health affairs—the board of health having resigned—the general supervision of the epidemic devolved on your C. M. I. and the health officer for the district. There were a few contact cases in the borough outside of the institution. Altogether there were seventy-eight cases in the borough, the Institution being within the borough limits. The physicians of the institution are to be commended for the thorough manner in which they handled the epidemic, thus preventing a much greater prevalence of the outside.

Measles: During December there was quite an extensive epidemic of measles in the same institution with a few cases in the village outside.

There were fewer schools closed during the year on account of communicable diseases than in any previous year, the number being six. Two were closed because of scarlet fever; two because of mumps; and two because of measles. This was due largely to the health officers being apprised of the diseases early and preventing contacts from attending school and polluting the school houses.

Your C. M. I. made thirty-two special visits for the purpose of establishing a diagnosis. Special pains were taken to know that what was called chicken pox was really that disease. He traveled by livery five hundred and forty-six miles. The same system as in former years was carried out in deputizing trustworthy physicians in the distant parts of the county for special diagnoses.

Smallpox: This year we again had smallpox to contend with. The first of the year a case developed in Oil City, the patient working in the railroad yards. Under the direction of the Commissioner, I took charge of the case in a general way. No other person contracted the disease. Early in March attention was called to a family, the mother and a small child being ill and having a peculiar rash. A diagnosis showed that the disease was smallpox. Further investigation showed that the husband had been having an illness and had had a rash. He, however, was supposed to be well and the physician in attendance had permitted him to go to work. He was immediately found and sent home. An examination showed plainly that his sickness had been a mild attack of smallpox. He, however, was isolated and all contacts possible were vaccinated. No other cases occurred except that of another child in the family. All recovered.

Mumps: There were 133 cases of the disease—the largest number during one year there has ever been in this county. Many adults were ill with it.

Chicken Pox: This disease prevailed only in certain sections of the county. As there had been smallpox early in the year, your C. M. I. was very careful to see that every case was properly diagnosed. There were forty-eight cases in all.

Whooping Cough: This disease was unusually light during the year. Only seventeen cases were reported, and they were said to be very light.

Diphtheria: This county was greatly favored this year in having only four cases of this disease. All were treated with antitoxin and all recovered.

Erysipelas: There were six cases reported.

Pneumonia: There were two cases of true pneumonia reported.

Poliomyelitis: There was one case reported. The patient died.

Typhoid Fever: I am much pleased in making this report to be able to render you the splendid showing for the year in this disease. We had during the year only ten cases. The disease existed in five different townships and in Polk Borough. In each one of the cases I was particular in having the health officer use his best efforts in tracing the origin as far as possible, and instruct the families as to the sources of danger in spreading the disease. I think that in the few cases reported much more care was exercised both by health officers and families than ever before. In no instance was there a second case in the same family or neighborhood.

Tuberculosis: Fumigations on death or removal of tubercular cases have been many. The officers are on the alert in this disease. Wherever it is known that a case exists—whether under dispensary treatment or not—the officers show a willingness to be helpful and useful.

During the year three boroughs disbanded their health boards and asked the Department to administer their health affairs. It would be well for the work if more of them followed this example. Throughout the county many of our epidemics originate in these boroughs or the two cities, and after a time we have to fight them in the various townships.

Your health officers have been faithful during the year and all have done excellent work.

Forms No. 36 received,	343
Forms No. 37 received,	232

WARREN COUNTY.

Dr. C. W. Schmehl, C. M. I.

In compliance with your request, I submit the following report of the activities of the Division of Medical Inspection in Warren County during the calendar year 1915:

Warren County with its twenty-three townships and eight boroughs has an estimated total population of about forty thousand. Of this number twenty-one thousand are resident in the townships and in three boroughs, viz., Bear Lake, Columbus and Grand Valley, which have been taken over by the State Department of Health for failure to provide any public health organization.

During the year the eight township health officers reported the quarantine of 268 cases of communicable diseases and rendered 227 reports of fumigation.

At various times I found it necessary to make investigations in fourteen townships and the borough of Columbus, either in person or by deputy, and in this work 1,251 miles were covered by railroad or trolley and 554 miles by livery besides 21 miles afoot.

Fourteen of the reportable diseases claimed our attention during the year. They are dealt with under the respective captions as follows:

Chicken Pox: Eighty-one cases of this disease were reported from eleven townships in nine months of the year, November, December and March leading with thirty-nine, nine, and eight cases, respectively. An outbreak among the pupils of the Tiona school, Mead Township, in November, numbering ten cases, and an epidemic of thirty-seven cases among the pupils of the Spring Creek schools, Spring Creek Township, in October, November and December, furnished nearly half of the cases. The balance (34) were sporadically present in nine townships in nine months of the year. Sheffield Township was visited for this disease on January 5, Mead Township on April 14, Brokenstraw Township on April 23, Sugar Grove Township on July 17, Spring Creek Township on November 12, Mead Township on November 27, Glade, Spring Creek and Columbus Townships on December 1, and Conewago Township on December 13. On June 19 three cases of smallpox were reported by telephone from Pittsfield Township by the attending physician. Review of the cases on the same day showed them to be chicken pox.

Diphtheria: Nine cases in six contiguous townships, Glade, Elk, Sheffield, Brokenstraw, Columbus and Limestone, in seven months of year, comprise all the reported cases of this disease. Glade Township had two cases in September with a single death, and Elk Township had one case in each of the months of January, February and June. The quarantine of a patient in a dairy located in Columbus Township took me into that district on September 18.

Erysipelas: Brokenstraw Township in July furnished the only reported case of this disease. The patient was an infant and died. The case was reviewed on request in the course of other work on the 30th of July.

Impetigo Contagiosa: Investigation of an eruptive disease among the pupils of the Tillotson school, Columbus Township, on February 23 disclosed three cases of impetigo contagiosa.

Measles: A total of four cases of measles, one from each of the townships of Farmington, Sheffield, Limestone and Columbus, in January, November, March and September, include all known cases of this disease in Warren County. At the request of the parent, I reviewed householder's diagnosis of his disease in Sheffeld Township on December 14.

Meningitis: A death from meningitis in Freehold Township in October, at a time when poliomyelitis was epidemic in an adjoining county, brought a request for disinfection of the premises. Simple meningitis was the probable cause of death.

Mumps: Thirty-eight cases of mumps were reported from twelve townships in eight months of the year. Seventeen cases among the pupils of the Brick school in Pleasant Township furnished nearly half of the cases in February and March. The balance of twenty-one cases were distributed in eleven townships, Farmington Township furnishing six cases in four months of the year. Investigations of rumored cases made it necessary to visit Pleasant Township on February 8 and March 18 and 24, and Glade Township on July 2, and Brokenstraw Township on July 30. Sugar Grove Township was visited by deputy on September 10, and Columbus Borough on November 17, the same service being rendered in each. Aside from the thirty-eight cases mentioned above, an outbreak in Columbus Borough required the quarantining of ten cases in November and five in December.

Pneumonia: Only a single case of pneumonia was reported during the year and that from Freehold Township in February.

Poliomyelitis: A request for diagnostic aid in this disease took me into Triumph Township on October 31. The patient, a male child of three and a half years, showed extensive spinal involvement, death ensuing on the fifth day of the disease from pneumogastric accident. The source of infection could not be traced, although a serious epidemic was in progress in the adjoining county of Erie and some cases had been reported from Venango County, also adjacent.

Smallpox: Four secondary cases in one of two families under quarantine in the villages of Sheffield and Barnes, Sheffield Township, at the close of the year 1914, brought the outbreak to a close with no further spread. Inspection of contacts was made in Sheffield Township on January 5, 9 and 11, and to release from quarantine in the same township on February 9 and 14. On April 11, I deputized a physician to inspect a smallpox contact residing in Columbus Township who had been exposed to the disease in New York State.

Scarlet Fever: This disease was almost continuously present in Warren County during 1915. Eleven months of the year gave a total of sixty-nine cases in eleven townships and two deaths. The disease was prosodemic in Sheffield Township in February, March, April, May and June to the number of nineteen cases. Sugar Grove Township had a small outbreak of eight cases in September and October with two and six cases respectively, and an epidemic among the pupils of the Lauder schools, Farmington Township, in December, furnished eleven cases. The balance of thirty-one cases in fifteen homes were reported from Conewago, Pleasant, Pine Grove, Elk, Cherry Grove, Spring Creek, Brokenstraw, Eldred, Farmington and Sheffield Townships at various times during the year with a maximum of two families under quarantine in each township. Cases were reviewed on request in Pine Grove Township on January 2, July 5 and September 13, and in Farmington Township on December 18, 23 and 27. Investigations of rumored cases took me into Sheffield Township on February 15, June 1 and 7, to Pleasant Township on September 29, and an inspection to release from quarantine in Pine Grove Township on September 1, the latter service also having been rendered in Pleasant Township on September 29 and October 31, and in Sheffield Township on March 4. Investigation of an epidemic in progress in Sheffield Township required my service on April 28 and May 18. Inspections of dairy farms for this disease were made in Farmington Township on January 6, July 9, December 25 and 31. Sugar Grove Township was visited on October 3 and 9 for a like reason, and the same service was rendered in Pine Grove Township on July 6, and in Spring Creek Township on August 22. The unusual prevalence of this disease in Warren County was doubtless due to the relative mildness of the affection, resulting in diagnostic errors and "missed" cases, some of them having been without medical attendance.

Tuberculosis: Twenty cases of this disease in all its forms, with ten deaths, were reported from eleven townships.

Typhoid Fever: A total of thirteen cases, eight of which were under quarantine on six dairy farms, were reported in six months of the year, all but one occurring in the last five months. Three patients received hospital care, of whom two died, and the balance were treated at their homes, all of the latter recovering. Dairy inspections for this disease were called for in Farmington Township on December 15, and in two instances on December 18, in Sugar Grove Township on July 30 and August 23, and in Corydon Township on October 6. Pleasant, Sheffield, South West, Kinzua and Pittsfield Townships each furnished one case, with a death in the local hospital from each of the last two towsnhips. Three patients residing in Farmington Township developed the disease following the ingestion of raw

shucked oysters, in November, which provoked acute gastro-enteric symptoms, typhoid ensuing. At your request I made a visit to Jamestown, N. Y., to obtain oyster liquor for analysis on December 22.

Whooping Cough: A small epidemic to the number of twelve cases in September and October among the pupils of the Barnes school, Sheffield Township, and a similar circumstance in and about the town of Corydon, Corydon Township, in September, October and November, furnished twenty-four of a total of thirty-seven cases quarantined during the year. Pine Grove, Freehold, Limestone, Triumph, Deerfield and Corydon Townships collectively had thirteen cases. Sheffield Township was visited on October 1 for this disease.

WASHINGTON COUNTY.

Dr. C. B. Wood, C. M. I.

I received a letter stating that Health Officer John W. Sarver, of Marianna Borough, had failed to placard for several cases of scarlet fever, and as the Marianna board of health was not active at that time, I visited the place, interviewed Health Officer Sarver, who admitted his neglect and promised to do better in the future.

May 2. I received a communication from the board of health of Canonsburg in effect that a stream flowing through the borough was polluted by manure heaps and other contaminating matter. My attention was also called to a garbage heap giving rise to offensive odors. I advised the Canonsburg board of health to proceed against the offending persons unless on notice the nuisances were at once abated.

July 6. I received a letter from a farmer in West Bethlehem Township, stating that the Ellsworth Coal Company had deposited night-soil on the company's land adjoining that of the complainant, and the seepage from this deposit was flowing over on land of the complainant. I wrote the Ellsworth Coal Company asking that the nuisance be abated at once, advising that the deposit be placed farther away from line fence and covered in as deposited.

July 9. On complaint of several citizens of Fredericktown, East Bethlehem Township, I visited that place. A sewer running along the main street had broken and allowed contents to run over the street and sidewalk. I notified the owners to abate the nuisance, and also asked that a letter be sent from the Department to the owners. In the same neighborhood several privies were overflowing, and I notified the owners to correct this nuisance at once.

Typhoid Fever: I was called to Millsboro and Fredericktown by Health Officer Hawthorne on account of an epidemic of typhoid fever

—eleven cases having developed. Samples of the water supplies, also of the milk furnished the infected districts, were secured and submitted to the Laboratory. The reports returned did not determine the source.

Under renewed efforts to prevent further spread of the disease, there was some abatement, but some straggling cases developed until October, when new cases developed. This increase will be noticed later.

Acting Health Officer Dr. Runion was called to Fredericktown, as the typhoid fever cases increased, fifteen new ones having been reported. On reporting conditions to the Department, Dr. Hunt, Associated Chief Medical Inspector, was sent out and remained on the ground for some time, making an exhaustive investigation of the situation.

I have on my record thirty-one cases of typhoid fever in this epidemic, which began in July, ending as the new year approached. This township—East Bethlehem—is the banner district in reporting typhoid fever, diphtheria and scarlet fever.

Mumps: I investigated an outbreak of mumps in Smith Township. The schools at Bulger and the Erie school were ordered closed and fumigated.

I was called to Nottingham Township on November 23 by Dr. Shuster, of Finleyville, to examine two children with eruptive fever, diagnosed as probably measles. Not confirmed, but erythema, as subsequent events proved correct.

During November, under departmental instructions, I investigated delinquencies of the following boards of health: Coal Center, California, Dunlevy, Speer, Finleyville, South Canonsburg, Burgettstown, Cherry Valley and New Eagle. In some instances the charges were proven, and the public health work of several of the above named boroughs was taken in charge by the Department.

November 22. I was called to Cecil Township by Health Officer Runion to investigate violation of quarantine by a dairyman named Hutchinson. With a total disregard as to results, this man, with scarlet fever in his house, had broken quarantine and was selling milk in several mining villages. We discovered the dairy maid washing milk bottles in luke warm water in a dirty dish pan, and her own testimony showed that the bottles were never scalded, thus adding to our conclusion of years' standing that a large percentage of Washington County milk sellers should be put out of business.

December 11. I was called to Granville, a small mining village, by Dr. Martin, of California. In the Granville school, East Pike Run Township, three cases of typhoid fever had developed, including one teacher.

The drilled school well had broken curbing, allowing surface drainage to contaminate the water. Tests of the water showed organic matter, but no B. Coli. Tests were also made of the local milk supply, with negative results. The well was locked up and no further cases developed.

With the exception of the typhoid fever epidemic in East Bethlehem Township, no serious conditions arose during the year in my territory.

The usual numerous interviews, by telephone or letter and in person, were experienced, regarding all manner of complaints.

As the years pass, however, I notice an improvement in the public regard for the work of prevention. More cooperation encourages, and while there is much need for yet more, we realize that the education in sanitary affairs is producing results.

Forms 36 received,	763
Forms 37 received,	569

I append a table showing the number of each received during each month.

	Forms 36.	Forms 37.
January,	62	43
February,	43	54
March,	62	37
April,	56	44
May,	40	32
June,	25	50
July,	26	15
August,	38	31
September,	42	41
October,	101	53
November,	147	74
December,	121	95

It is interesting to note the increase of Forms 36 attending the opening of the schools. Then, the all important question of ventilation arises, and we recall the number of schools visited with very insufficient ventilation.

Examined cases alleged to be:—

Diphtheria,	1	Typhoid fever,	11
Scarlet fever,	1	Measles,	2

Sale of milk stopped on account of scarlet fever,	1
Schools closed,	4
Stock trasnfers,	1

WAYNE COUNTY.

Dr. L. B. Nielsen, C. M. I.

The following is a summary of the work of the county medical inspector of Wayne County for the year 1915:

From health officers I received reports of the placarding of one hundred and forty-two premises and the disinfection of a hundred and fifty-one premises.

As county medical inspector I made twenty-five trips to different parts of the county for the purpose of inspecting cases unattended by a physician and suspected of being a disease requiring quarantine, or to arrange for the proper restriction of the sale of milk and milk products from premises under quarantine for a communicable disease, as follows:

Inspection of cases alleged to be scarlet fever, ...	9 trips.
Inspection of cases alleged to be chicken pox, ...	2 trips.
Inspection of cases alleged to be measles, ...	2 trips.
Inspection of cases alleged to be diphtheria, ...	3 trips.
Inspection of dairy farms quarantined for scarlet fever, ...	2 trips.
Inspection of dairy farms quarantined for diphtheria, ...	4 trips.
Inspection of dairy farms quarantined for typhoid fever, ..	3 trips.

These trips totalled 623 miles, of which 616 were made by automobile and seven by livery, and required seventy-nine and a quarter hours. Several trips for similar purposes were made by local physicians deputized so to act, when the condition of the roads limited travel.

Instruction of health officers, correspondence with the Department, health officers, and others on Department business, and the entering of the necessary records, required forty and a quarter hours.

Five public school children of poor parentage were vaccinated at the expense of the State.

Reports of infectious diseases were received as follows:

Typhoid Fever: Sixteen cases in twelve houses.

January—one case, one house—Buckingham Township.
February—one case, one house—Preston Township.
July—one case, one house—Preston Township.
August—two cases, one house—Buckingham Township.
one case, one house—Damascus Township.
one case, one house—Texas Township.
September—two cases, two houses—Texas Township.
October—one case, one house—Texas Township.
one case, one house—Cherry Ridge Township.
November—one case, one house—Clinton Township.
December—four cases, one house—Berlin Township.

Diphtheria: Twenty cases in thirteen houses.

January—one case, one house—Salem Township.
February—one case, one house—Preston Township.
(Three other families, Preston Township, kept under observation quarantine for several days.)
one case, one house—Texas Township.
two cases, one house—Oregon Township.
March—three cases, two houses—Texas Township.
August—three cases, one house—Mount Pleasant Township.
September—one case, one house—Preston Township.
October—one case, one house—Palmyra Township.
November—one case, one house—Palmyra Township.
four cases, one house—Berlin Township.
one case, one house—Buckingham Township.
December—one case, one house—South Canaan Township.

Scarlet Fever: Twenty-two cases in fourteen houses.

March—one case, one house—Damascus Township.
April—two cases, two houses—Damascus Township.
June—one case, one house—Damascus Township.

September—one case, one house—Sterling Township.
fourteen cases, six houses—Dyberry Township.
(A small epidemic in Dyberry Township; one family was discovered with four children and three other families with one child desquamating. In one of these families two other members were found in the active stage of the disease, and in two other families the rash was found,—one family with four cases and the other with one case.)
October—one case, one house—Salem Township.
December—one case, one house—Texas Township.
one case, one house—Paupack Township.

Measles: Eighty-three cases in forty-seven houses.

February—seven cases, three houses—Sterling Township.
March—one case, one house—Sterling Township.
May—ten cases, four houses—Lake Township.
one case, one house—Salem Township.
seven cases, three houses—Paupack Township.
June—nine cases, eight houses—Salem Township.
thirteen cases, six houses—Lake Township.
twenty-two cases, thirteen houses—Paupack Township.
July—one case, one house—Salem Township.
one case, one house—South Canaan Township.
one case, one house—Paupack Township.
three cases, one house—Manchester Township.
August—one case, one house—Manchester Township.
November—three cases, one house—Mount Pleasant Township.
two cases, one house—Damascus Township.
one case, one house—Berlin Township.

Chicken Pox: Nineteen cases in twelve houses.

January—one case, one house—Damascus Township.
February—one case, one house—Manchester Township.
one case, one house—Mount Pleasant Township.
March—one case, one house—Lake Township.
two cases, two houses—Lehigh Township.
April—two cases, one house—Lehigh Township.
May—four cases, one house—Lebanon Township.
June—two cases, one house—Manchester Township.
August—two cases, one house—Oregon Township.
two cases, one house—Texas Township.
December—one case, one house—Dreher Township.

Whooping Cough: Fifty-six cases in thirty houses.

February—one case, one house—Lake Township.
thirty cases, thirteen houses—Preston Township.
May—two cases, two houses—Preston Township.
two cases, one house—Scott Township.
August—two cases, two houses—Texas Township.
October—four cases, three houses—Manchester Township.
November—eight cases, three houses—Manchester Township.
one case, one house—Buckingham Township.
one case, one house—Lehigh Township.
December—two cases, one house—South Canaan Township.
three cases, two houses—Damascus Township.

Mumps: Eighteen cases in fourteen houses.

February—two cases, one house—Salem Township.
seven cases, five houses—Salem Township, discovered at end of quarantine period and disinfected.
March—one case, one house—South Canaan Township.
six cases, five houses—Lake Township.
April—two cases, two houses—Lake Township.

German Measles: Two cases in two houses.

March—one case, one house—Texas Township.
April—one case, one house—Dyberry Township.

Erysipelas: One case in March in Damascus Township.

Other houses were disinfected after death of patients, as follows:

Tuberculosis—ten. Pneumonia—one.

No doubt there were a considerable number of cases of less severe infectious diseases unreported.

WESTMORELAND COUNTY.

Dr. Iden M. Portser, C. M. I.

Measles: During 1915 a hundred and eighty-four households were under quarantine for this disease. A small epidemic occurred at Pleasant Unity, Unity Township, sixty-six cases being reported in November.

Mumps: One hundred and nine households were under quarantine for mumps. In February, at the Foxtown school, eight households were quarantined by the health officer of Hempfield Township, and the diagnosis confirmed. In the early months of the year, thirty-nine households were under quarantine for this disease at Webster, Rostraver Township. It was necessary to confirm the diagnosis in twelve instances.

Chicken Pox: One hundred and forty-one households were under quarantine for chicken pox. In March the health officer of Derry Township turned in morbidity reports for nine families at Millwood, Derry Township. All required confirmation. In November, eleven householders were "trapped" by the health officer of Hempfield Township in the vicinity of Middletown.

Scarlet Fever: One hundred and seventy-six households were quarantined. Hempfield Township led with sixty-five, and during November and December in the vicinity of New Stanton twenty-one households were quarantined in this district. In November in the Fountain and Jones Mills school districts, Donegal Township, this disease was contracted in nine families and diagnosed from this office. Previously the disease had been diagnosed as various maladies. In March twelve households were quarantined at Hannastown, Hempfield Township.

Diphtheria: This disease occurred in one hundred and seventy-three families, Hempfield Township leading with forty-two. It was reported in the Youngwood and New Stanton districts sixteen times during November and December, and was hand in hand with the scarlet fever reported above.

Typhoid Fever: In November typhoid fever was noticeable in Donegal and Cook Townships, in the vicinity of Stahlstown. The former township had ten cases and the latter five. The disease was carried into these townships from Bakersville, Somerset County, and created considerable anxiety, as several of the cases were on the watershed of Indian Creek, others on the watershed of the Loyalhanna, both creeks forming a large municipal water supply.

At Trauger in the latter months of the year a small epidemic took place. Trauger has a population of six hundred persons, dwelling in Mt. Pleasant Township, and is a mining plant of the Frick Coke Company. The water supply consists of a reservoir of a capacity of nine million gallons. This is used in part for the manufacture of coke. The portion pumped into tanks for domestic use, except drinking, is treated. The drinking water is procured from nine springs in the vicinity, principally from a large brick-walled and protected spring in the center street of the "blocks." All water in the place was found to be contaminated even after treatment. A wide variety of opinion exists as to the origin of the trouble. Be that as it may, as the people use the same utensils to carry water in, both from the hydrants supplied by the reservoir and from the springs for drinking purposes, the spring water soon becomes contaminated. The solution to the problem would be a supply from drilled wells. Thirty-eight cases of fever were reported from this vicinity.

In December, at Dominick Evangelist's, near Jeannette, in Hempfield Township, eleven cases developed in persons in two tenement houses on his property. He maintained his own water plant on the hillside below the level of High Park Plan of Lots and it received drainage direct from this plan. Just previous to the outbreak four cases of typhoid fever existed on the above plan and the water plant became polluted by catching the drainage. The water plant was abandoned and no trouble has since occurred.

Whooping Cough: Forty-five households were quarantined for whooping cough.

Tuberculosis: This disease was reported in forty-seven instances.

Erysipelas: Eight cases were reported.

Anterior Poliomyelitis: Two cases were reported.

Trachoma: Four cases reported.

Impetigo: Two cases reported.

Tetanus: One case reported.

Pneumonia: Six cases were reported.

Summary of Work Done During the Year.

Forms 36 received,	1,199	Miles traveled by railway,	1,722
Forms 37 received,	939	Miles traveled by livery,	559
Cases examined alleged to be:—		Dairy farms inspected for:—	
Smallpox,	3	Typhoid fever,	4
Diphtheria,	1	Diphtheria,	2
Scarlet fever,	35	Scarlet fever,	5
Chicken pox,	36	Sale of milk stopped because of:—	
Whooping cough,	6	Typhoid fever,	2
Measles,	3	Health officers instructed:—	
Schools closed because of:—		At office,	31
Mumps,	1	In the field,	9
Measles,	1		
Diphtheria,	1		
Scarlet fever,	2		

Work of borough boards of health taken over by the Department in the following boroughs: Bolivar, Livermore, Avonmore, East Vandergrift, Arona, Madison and Smithton.

WYOMING COUNTY.

Dr. H. L. McKown, C. M. I.

Wyoming County, one of the small counties of the State, has an area of about four hundred square miles, with a poulation of about eighteen thousand. There are eighteen townships and five boroughs in the county. Of the eighteen townships under my supervision, eight were visited by me or a deputy during the year in an official capacity, namely, Falls, Forkson, Exeter, Clinton, Noxen, Lemon, Windham and Eaton.

During the year there were two hundred and ten reports of placarding (Forms No. 36) and one hundred and seventy reports of disinfection (Forms No. 37). These reports were examined, corrected, recorded, and then forwarded to the Department.

Of the diseases reported, this office had to do with the following: Tuberculosis (disinfection only), mumps, measles, erysipelas, scarlet fever, chicken pox, typhoid fever, diphtheria and whooping cough.

During the month of January, fifty-six cases of communicable diseases were reported (more than twice as many as in any other month), while November had only six cases reported.

Measles: There were more cases of measles reported throughout the county than of any other disease, this being especially so in Noxen, Monroe and Forkston Townships, none being reported from Nicholson, Braintrim, North Branch or Overfield Townships.

Notwithstanding measles occupied the first place in number of communicable diseases reported during the year, however, only seventy-six cases were reported against two hundred twenty cases in 1914.

Mumps: Scattered cases of mumps were reported from every section of the county, every health officer reporting one or more cases. My attention was called to a case of mumps on the premises of M. Z. in Lemon Township when in that vicinity. I immediately had proper quarantine regulations carried out and children in the family excluded from school, instructing the family, also the school teacher, in their duties. No other cases were reported from that district as a result.

Chicken Pox: Thirty-three cases of chicken pox were reported from six townships, Noxen Township having the largest number—twenty-three in March, April and May.

Erysipelas: Two cases of erysipelas were reported during the year, one in Windham Township and one in Falls Township.

Tuberculosis: There were fifteen cases of this disease that came under my observation for fumigation, either after the death of the patient or after the removal of the family.

Whooping Cough: Next to measles, whooping cough was more prevalent than any other communicable disease reported. This disease was confined to a small area, as only four health officers reported it. There was, however, quite an epidemic in Forkston Township during October and November.

Diphtheria: There were twenty cases of diphtheria reported from five townships, Noxen and Monroe having the largest number. After reviewing the reports of the health officers and in a number of cases getting in communication with them on the telephone, I did not visit any of these cases, being satisfied that they were properly quarantined and that proper quarantine regulations were being observed.

Typhoid Fever: Five cases of typhoid fever were reported from five townships. At the request of the Department, I or Dr. W. W. Lazarus, acting as my deputy during my absence, visited each one of the cases, making a sanitary survey of the premises and reporting it in full to the Department. Ten cases of typhoid fever were reported last year, 1914.

On May 11, I inspected the premises of A. F., Falls Township, where there existed a case of typhoid fever. I found the sanitary conditions in very good shape but found that they were a little lax in handling milk. I went over the situation thoroughly with the two men who had charge of the stock, and the sale of milk was continued under rigid restrictions. This disease was probably contracted either in Wilkes-Barre, Plymouth or Nanticoke, as the patient had previously gone to these places on numerous occasions in a business way.

On July 19, Dr. W. W. Lazarus (deputy) inspected the premises of C. D., Forkston Township, where a daughter was ill with this disease. The sanitary conditions were not of the best, and as this is a hotel property, the proprietor was advised against further entertainment of guests. This advice was complied with. The case was undoubtedly contracted on an automobile trip which was taken some four weeks previously.

On August 6, Dr. W. W. Lazarus (deputy) inspected the premises of G. K., Exeter Township, where the wife was ill with the disease. The sanitary conditions were reported as being bad, and a thorough overhauling of the premises was advised. The disease was probably contracted in Wyoming Borough where the patient had been visiting some three weeks previously.

On August 29, I inspected the premises of H. P., Clinton Township, and found Mr. H. P. ill with typhoid fever. The sanitary conditions were none too good, and after going over existing conditions with Dr. French, the family physician, and the family, it was decided to remove the case to the D. L. & W. Hospital at Scranton, he being a section boss for the railroad. The disease was probably contracted while at work along the railroad.

On November 16, I visited the premises of S. H., Windham Township, and found Mrs. S. H. ill with typhoid fever. The sanitary requirements were being properly carried out, as a competent doctor and a trained nurse were in attendance. The sale of milk had been stopped on account of non-compliance with rules and regulations. Water was procured from the well which was suspected and later examined. Absolute source of contagion unknown. No other persons contracted the disease in this vicinity.

Scarlet Fever: Three cases of scarlet fever were reported from Braintrim Township, and as the health officer informed me that proper precautions were observed, I did not consider it necessary to visit the premises.

There were only five cases of typhoid fever and three cases of scarlet fever during the entire year, and with the exception of measles, whooping cough and chicken pox (and there were a comparatively small number of cases of these), the county has been exceptionally free from communicable diseases. Parents, teachers and school directors are taking more interest and also see the necessity of early reporting contagion; and physicians and also the health officers are more conscientious in the discharge of their duties toward the public, and in this way keep in check contagion that a few years ago would have become an epidemic.

YORK COUNTY.

Dr. J. S. Miller, C. M. I.

On careful examination of my records for the year 1915, I find that scarlet fever prevailed to an unusual extent in Codorus Township, especially, and in a minor degree in Manheim, Shrewsbury and Springfield Townships, all of which adjoin Codorus Township.

My first inspection for scarlet fever was made January 10, when I visited the family of J. J. B., Codorus Township, accompanied by the health officer of this township. I found a family of seven children, three of whom were married and lived with their families in the neighborhood. The patient, aged twelve years, was taken ill January 4 while in school; therefore, the school was closed and the secretary of the school board notified to disinfect the school room before reopening school. Butter was made and sold from the premises; further sale was stopped. The family was very reticent and unwilling to give me information, but from what little I was able to learn I concluded that a brother of the patient, aged fifteen years, had suffered from a mild attack of scarlet fever, the date of onset about December 18, 1914; no physician was in attendance and hence

the case was not reported. This was the first known case of scarlet fever in Codorus Township, and the source at this time could not be ascertained.

On January 14, I visited the family of W. F. T., Codorus Township. This family consisted of the parents and four children, ranging in age from eighteen months to twenty-eight years. The patient, aged twenty years, was taken ill January 7, and on carefully examining the family I found that an infant daughter, aged eighteen months, had been a sufferer from a mild attack of scarlet fever, and, as far as I was able to ascertain, no physician had been in attendance. Cream was sold from this farm, the sale of which I ordered discontinued. As you will observe, the infant in this family was the first to be attacked with scarlet fever, and as two of the children were immune by reason of a previous attack, I found but one case in the family. I was again contronted with persons who were unwilling to give me any information about the prevalence of scarlet fever in this neighborhood. This family resides about one mile from the dairy farm I inspected January 10. I suspected from meagre information from this family that there had been mild cases of scarlet fever in the Brodbeck school district, Codorus Township, and hence ordered this school closed and the school room disifected.

On January 16, I inspected the dairy farm of E. S. B., Codorus Township. The family consisted of the parents and three children, all of school age. The patient, aged eleven years, was taken sick with the date of onset January 9. This case was attended by a physician and the case reported. The children attended the Seitzville school, which I ordered closed and the school room disinfected, as I suspected that this child contracted her illness while in this school. I was unable to obtain information about how scarlet fever had been carried to the Seitzville school which was located several miles from the homes of the previous inspections.

On January 20, I visited the dairy farm of C. H. S., Codorus Township. The family consisted of the parents and four children, two of school age, the youngest child being five years of age. The patient, aged fourteen years, date of onset January 12, atatended the Seitzville school and contracted her illness in that school. During this inspection I had a personal interview with C. E. D., the teacher of the Seitzville school, and found that he had an enrollment of fifty-two pupils; the number present January 18 was seven; January 19 the number was eleven, after which the school was closed by my orders. After consultation with the president and secretary of the school board they agreed to keep this school closed for one month, as there was every reason to believe that a number of pupils in this school had had mild attacks of scarlet fever. Butter was made and sold from the premises; further sale was discontinued.

This school district seemed to have the greatest number of cases reported and unreported of any school district at this time, but I was unable to obtain information that would lead me to the probable cause of the first case in this vicinity.

On January 23, I visited the dairy farms of E. C. K., Manheim Township; C. L. G., J. F. F. and I. S., in Codorus Township. I found two patients in the first family, one patient aged seven years and her mother, aged thirty-seven years, the date of onset in both cases being January 15. This family lives within a mile of the Mason and Dixon line and receives its mail at Lineboro, Maryland. The postmaster's family in Lineboro had scarlet fever and in all probability the K. family became infected by the mail or through visiting the post office for its mail.

The second family, that of C. L. G., consisted of the parents and three children and a farm hand. I found two of the family ill with scarlet fever, the date of onset of the first case being January 10. This case was a very mild one, no physician being in attendance. The date of onset of the second case was January 19, when a physician was employed, this case being more severe than the first one. The first case was traced to the Brodbeck school.

Milk was sold from both of these premises; its further sale was discontinued.

The third family consisted of the parents and two children and a farm hand. I found four cases; the first was the farm hand, aged twenty years, date of onset January 16; second case was a child, aged seven years, date of onset January 18; third case was a child, aged four years, date of onset January 18; fourth case was the mother of these two children, the date of onset being January 19. Scarlet fever was brought into this family by the farm hand, who was first taken ill, and he contracted the disease while visiting in the neighborhood.

The fourth family consisted of the parents and five children. I found but one patient, aged twenty-two years; date of onset January 15.

Butter was made and sold from these premises; further sale of it was discontinued. This patient contracted scarlet fever in the neighborhood, as it prevailed in many families, and but a few of them employed a physician, in most instances the cases being very mild, and up to this time I had not arrived at a definite conclusion as to the source of the first case in Codorus Township.

As before stated, I spent the entire day of January 23 visiting families in Codorus and Manheim Townships, and during this time I received sufficient information to direct me to the probable cause of the spread of scarlet fever throughout Codorus and adjoining townships.

The Codorus Township high school, which is located at Glenville Station, on the Western Maryland Railway, and about one mile from the Mason and Dixon line, has pupils from all school districts in Codorus Township and a number from Carroll County, Maryland. During the latter part of 1914 (the exact date could not be ascertained), B. K., a pupil from Carroll County, Maryland, came from a family wherein scarlet fever existed. She probably had a mild attack while attending school. The pupils attending this high school carried the disease to many homes in the community, and this explains why the younger children, under school age, became the first victims in a number of instances.

I closed this high school and had the school rooms cleansed and disinfected, following the instructions of Form No. 18. One of the teachers resided in Glen Rock Borough and no doubt carried the disease to that borough.

On February 7, accompanied by the health officer of Codorus Township, I inspected the dairy farm of L. K. T., Codorus Township, on account of scarlet fever in the family, date of onset January 31, the case being attended by a physician. This case of scarlet fever was contracted while visiting a neighbor whose family had had mild scarlet fever about three weeks before and unattended by a physician.

I visited the neighbor's family where scarlet fever was alleged to have existed and found all of his children, three in number, suffering from whooping cough, and from information received, I felt satisfied that these children had had mild attacks of scarlet fever. I reported these cases of whooping cough and the family was quarantined. The sale of butter was stopped. On investigating the school attended by these children the teacher admitted that some of her pupils had whooping cough and also scarlet fever. The school was closed and the school room disinfected.

On receipt of a telephone message February 13, reporting scarlet fever on a dairy farm of W. F. W., Codorus Township, and that milk was sold from the premises, on February 14, I visited the dairy farm, accompanied by the health officer of the township. I found the family to consist of the parents and nine children, three of whom had been slightly ill with scarlet fever, no physician being in attendance. When the fourth child was taken ill the illness was severe and a physician was called who diagnosed the disease as scarlet fever and reported the case to the health officer. I reported the first three unreported cases. From twenty to twenty-three gallons of milk were shipped daily to J. J. G., Baltimore, Maryland. Two of the oldest sons of the family took an antiseptic bath, the health officer fumigated their clothing, after which they removed to a dwelling in the neighborhood and took entire charge of the dairy during the quarantine period, and thus the sale of milk was continued.

The disease was contracted while attending public school; the school was closed and the school room properly cleansed and disinfected.

Scarlet Fever in a Borough: The health officer of Hopewell Township resides in Stewartstown Borough and reported that this borough was without a board of health and that scarlet fever prevailed there. He further requested that an investigation be made relative to an outbreak of scarlet fever. On presenting his request to the Chief Medical Inspector by telephone, I was instructed to make an investigation and report my findings. On February 2, I proceeded to investigate as directed. Dr. E. M. F. of Stewartstown accompanied me to one of his patients where I found a very pronounced and unmistakable case of scarlet fever in a young man twenty years of age. This physician informed me that he was attending four similar cases at that time; these cases were all placed under quarantine. All his scarlet fever patients could be readily traced to a shoe repairing shop in the borough.

I visted the home of this cobbler and on examining his family received a satisfactory history of scarlet fever in all of his children, four in number. This was the first family in the borough to have scarlet fever. They were attended by a physician for some minor ailment as the cases were mild.

The source of contagion in this family was traced to Harford County, Maryland, which was the former home of the mother of these children and where she had visited from four to six weeks before my inspection.

The public schools in the borough were all closed by my orders and remained closed until after the school rooms had all been disinfected. I visited the chief burgess who informed me that council would convene that evening, February 2, when a board of health would be appointed and that they would immediately organize and assume charge of health affairs of the borough.

The cobbler shop was fumigated at once, also his premises, after which there was no further spread of scarlet fever.

Diphtheria: January 2, I visited the family of E. H., Dover Township, accompanied by the health officer of the township wherein diphtheria had been reported and that butter was made on the premises and sold. I found the family to consist of the parents and eleven children, five of whom lived at home. The patient was sixteen years of age, date of onset December 29, 1914. He was taken ill while in school on that day. He was attended by Dr. E. E., who first visited the patient December 30, when he administered antitoxin to the patient and also gave immunizing doses to the remaining children in the family. This disease was contracted in school which was closed and the school room disinfected. The sale of butter was stopped during the quarantine period.

April 11, I visited the dairy farm of G. A. S., Hellam Township, accompanied by the health officer, as diphtheria had been reported and that butter was made on the premises and sold. I found the family to consist of the parents and six children, two of whom and their mother were ill with diphtheria, dates of onset April 5, 7 and 8, respectively. Antitoxin was administered to each patient and immunizing doses given to remaining members of the family. Five pounds of butter were made and sold weekly; further sale of this was stopped.

This family lived in the borough of North York until March 16, when they removed to their present home in Hellam Township; the children have not attended school since leaving North York. During February and March there were a number of cases of diphtheria reported in North York Borough, and I believe they carried the contagion with them from this borough, as the history of the premises where they now live has been negative for three years. Mr. S. and four of his children attended church services April 4, and I, therefore, ordered the church closed and disinfected before further services should be held.

On November 1, accompanied by the health officer of Jackson Township, I proceeded to investigate alleged cases of diphtheria in the J. M. school district. I first visited the family of H. R. M., a Dunkard preacher. This family consisted of the parents, ten children, all at home, and a maid-servant aged twenty years. Mrs. M. admitted that a number of her children had had sore throats, the first case about October 1, but she was satisfied that it was not diphtheria. I examined some of the children and was unable to diagnose diphtheria, but upon examining the maid-servant found her suffering from a well-marked case of diphtheria, date of onset October 29. I reported this to the health officer, who immediately placarded the house. They had a physician but he did not diagnose diphtheria. Butter was made and sold from the premises. I stopped the sale of it.

I next visited the home of P. S. There were no children in this family. I found that Mrs. S. had suffered from diphtheria, date of onset October 25. She was attended by a physician who failed to establish the diagnosis of diphtheria. I reported the case to the health officer who immediately placarded the house. No dairy products were sold here.

I next visited the family of J. K. S. The family consisted of the parents and two children. A daughter, aged twelve years, had been taken ill with sore throat, etc., October 22, a physician attending, but no diagnosis of diphtheria had been established. I diagnosed the case to be diphtheria, reported it to the health officer, and he placarded the house.

Mrs. S. made butter and baked small cakes, all of which were sold in a York market. The sale of these was stopped during the quarantine period.

These cases were all traced to the J. M. school, which was closed and the school room disinfected. None of the cases were of a malignant character and antitoxin had not been administered to any of them.

November 5, I inspected the dairy farm of N. S. L., Heidelberg Township, accompanied by the health officer. I found the family to consist of the parents and two children. Found a daughter, aged twenty years, suffering from diphtheria, date of onset October 27; she was attended by a physician who administered antitoxin to the patient and gave immunizing doses to the balance of the family. The sale of all milk products was stopped.

This was the only known case of diphtheria in this township at the time. On October 23, this patient had attended a Love Feast in the Pleasant Hill Meeting House, Jackson Township, where H. R. M. preaches. This church is located in the same neighborhood as the J. M. school, in which district I had found a number of unreported mild cases of diphtheria during my investigation on November 1.

Immediately after this investigation I instructed the health officer of Jackson Township to order the Pleasant Hill Meeting House to be closed and to remain closed until after it had been disinfected. I am glad to report that no further spread of diphtheria occurred in Heidelberg Township.

Typhoid Fever: During 1915, one hundred and seventy-four cases of typhoid fever were reported in York County; this was an unusual number and the disease was not generally found in all parts of the county but broke out in certain districts. Each local outbreak was investigated in detail and the results of the various investigations will be found in a special detailed report on typhoid fever in this volume, wherein the causation has been carefully studied.

Mumps: February 1, accompanied by the health officer, I visited the Matthias school, West Manheim Township, from which school alleged cases of mumps had been reported. The enrollment was forty-three. On February 1, there were present nineteen pupils. The teacher informed me that mumps first appeared in his school about January 1. No physician was called to attend these children, and the teacher estimated that about thirty of his pupils during this period had suffered from mumps.

I closed the school and ordered the school room to be disinfected. This was done and no further spread of mumps was reported. The source of the disease could not be ascertained.

March 15, accompanied by the health officer, I went to New Park, Fawn Township. I visited the primary and secondary schools, and, from the information received, proceeded to investigate the cause of children being absent from school. I found the majority of the school children who were not immune afflicted with mumps, about thirty in all. The families were visited and the children examined. The health officer placarded the houses and both schools were closed and the school rooms disinfected. There was but one family in this locality that had employed a physician; the case had been reported and quarantine established. There seemed to be a general understanding in this community that all the children had mumps and nothing should be done.

Mumps were introduced into the New Park schools by a boy from New Freedom Borough who visited his grandparents at New Park. This boy suffered from mumps while in New Freedom Borough. The case was not reported nor were any precautions taken.

March 23, accompanied by the health officer, I proceeded to examine the family of W. J. J., Fawn Township, wherein the health officer alleged mumps to exist, but the family refused to admit it. I found four children suffering from mumps and reported my findings to the health officer, who placarded the house. No physician was in attendance.

I next visited the home of a colored family and found that the mother and two children had suffered from mumps the latter part of February. The quarantine period having expired I ordered the health officer to disinfect the house. There were no children of school age in this family. This colored woman did family washing but refused to wash clothes for any one during the illness of herself and children. She had visited relatives in Harford County, Maryland, early in February, where mumps existed.

April 30, the health officer in Codorus Township informed me that citizens of that township had reported to him that alleged cases of mumps existed in the Codorus Township high school, located at Glenville. May 3, accompanied by the health officer, I visited this high school, and on interviewing Professor Kelly, the principal, I was informed that a son of the president of the school board of Codorus Township had been absent from school one week and on his return to school informed his teacher that during his absence he had an attack of mumps and was not attended by a physician. He was refused admittance, was sent home and was instructed to remain from school twenty-one days from date of onset of the disease, after which he would be readmitted. The house was disinfected.

Whooping Cough: During the year there were one hundred and thirty-three cases of whooping cough reported. I visited schools on several occasions wherein whooping cough had been alleged to exist,

and as a rule I was unable positively to diagnose this disease in children who were in school. Where I was convinced that children attending school came from families wherein whooping cough existed I found it best to visit the family and make a personal examination.

Measles: On December 8, I visited the village of New Holland, East Manchester Township, wherein an outbreak of measles had been reported by the health officer. I visited both schools and closed them on account of this outbreak and instructed the secretary of the school board to have both rooms disinfected, after which the schools should be reopened.

During this investigation I also ordered the U. B. Church to be disinfected on account of a public funeral held there December 6, the child having died from pneumonia, following an attack of measles.

The source of measles in this particular locality was probably York New Salem Borough, to which place I traced the family that was first afflicted with measles in New Holland.

True Pneumonia: True pneumonia is reported only occasionally. The majority of physicians neglect to report this disease and hence you will find in my report only four cases.

Erysipelas: Erysipelas has been reported with more care and hence I have received a report of nine cases during the year.

Poliomyelitis: One case of poliomyelitis was reported during the year.

W. Stewart Young, East Prospect, health officeh in Lower Windsor Township, died February 17, 1915. H. Frank Fake, Craley, was appointed health officer for Lower Windsor Township and was instructed at my office September 29, 1915.

During the year various health officers of the county called at my office from time to time, either for further information or to report on general conditions existing in their respective territories.

At various times I was consulted by telephone or in person by secretaries of boards of health, health officers, or other persons interested in the administration of the law regulating boards of health in boroughs of the county.

By direction of the Commissioner I assisted in organizing a board of health in the boroughs of Stewartstown, Winterstown, Fawn Grove and Spring Grove.

I regret to report that few physicians and fewer nurses have any knowledge of the act approved June 5, 1913, referring to "physicians, midwives, nurses or all other persons having care of an infant where eyes have become inflamed, swollen, or reddened, at any time within two weeks after birth."

York County does not have a midwife within its borders.

Statistical Summary of Work Done in York County During 1915.

Forms No. 36 received,	706
Forms No. 37 received,	636
Examined cases alleged to be:—	
Typhoid fever,	80
Diphtheria,	24
Scarlet fever,	45
Measles,	40
Whooping cough,	7
Sale of milk or milk products stopped on dairy farms,	47
Typhoid fever,	21
Diphtheria,	9
Scarlet fever,	17
Schools ordered closed and fumigated	31
Scarlet fever,	12
Diphtheria,	9
Mumps,	4
Whooping cough,	3
Measles,	2
Chicken pox,	1
Cases of communicable diseases reported during 1915,	740
Typhoid fever,	174
Whooping cough,	133
Scarlet fever,	96
Chicken pox,	23
Impetigo contagiosa,	4
Poliomyelitis,	1
Diphtheria,	113
Measles,	106
Mumps,	77
Erysipelas,	9
Pneumonia (true),	4
Dairy farms inspected for:—	
Typhoid fever,	40
Diphtheria,	18
Scarlet fever,	17
Stock transferred on dairy farms on account of typhoid fever,	2
One church fumigated on account of diphtheria.	
One church fumigated on account of measles.	

During this time I traveled 2,450 miles by rail; 1,402 miles by livery, consumed 585 hours, in which time ninety-nine inspections and forty-three investigations were made.

County.	Cases Examined Alleged to Be—								Dairy Farms Inspected.							Schools closed.
	Variola.	Typhoid.	Diphtheria.	Scarlet fever.	Epidemic meningitis.	Varicella.	Pertussis.	Measles.	Typhoid.	Variola.	Diphtheria.	Scarlet fever.	Epidemic meningitis.	Stock transferred.	Sale of milk stopped.	
Totals,	125	363	435	546	4	842	240	1,293	315	3	173	126	7	40	284	358
Adams,		3	2	15		36	8		17		5	4		1	23	6
Allegheny,	24	6	182	59	3	130		337	5		2	2		2	7	15
Armstrong,	2		1	3		41		62	2	1		3			4	21
Beaver,	2	1	3	24		51	7	18								4
Bedford,		2	2	4		19	1		9		14	6			2	
Berks,	3			5				1	2							
Blair,		33	17	8		60	17	5	9		14	7			6	10
Bradford,		6	11	13		78	1	463	17		9	6			19	60
Bucks,		1													1	3
Butler,														4	9	32
Cambria,								4								
Cameron,																1
Carbon,		8		11		10										
Centre,				1					1		1		6			7
Chester,	2	33	11	3		6			1							3
Clarion,	1	4	20	2		3		8								
Clearfield,																
Clinton,		1		9				1								2
Columbia,				2		32		64	1							7
Crawford,	3		7	2		15		4	14	1	3	6		1	10	3
Cumberland,		26	23	9		22		1	28		3	6			13	5
Dauphin,	1	33	10			5	7	14	11		2				2	2
Delaware,	2	11		1		2		12	9		1	1				
Elk,			1	1												1
Erie,	5		1	5		25										
Fayette,	3	23	1	4	1			3								3
Forest,																
Franklin,	1	7	4	4		1	6		37		27	5		1	48	4

DETAILED REPORT OF WORK DONE BY COUNTY MEDICAL INSPECTORS DURING 1915—Continued.

County.	Cases Examined Alleged to Be—								Dairy Farms Inspected.							Schools closed.
	Variola.	Typhoid.	Diphtheria.	Scarlet fever.	Epidemic meningitis.	Varicella.	Pertussis.	Measles.	Typhoid.	Variola.	Diphtheria.	Scarlet fever.	Epidemic meningitis.	Stock transferred.	Sale of milk stopped.	
Fulton,		1		7		5										2
Greene,		19	10	11		2		5								1
Huntingdon,	7	2	3	12		8			2		1			1	1	4
Indiana,	1		6													
Jefferson,	1	12	9	33		15									1	4
Juniata,	5	1	4	8					1			1		1	3	3
Lackawanna,	18	2	7	2		5					1					3
Lancaster,						2	7		12		1	6			3	2
Lawrence,	6		5			5									1	5
Lebanon,			1			19	2		21		23	3	1	1	6	6
Lehigh,				4		1	6		4		1	8				3
Luzerne,	1															4
Lycoming,				1			1									
McKean,	1			4							1	1				
Mercer,	6		5	6		2	4	1	2		7				9	2
Mifflin,		6	2	2		14		46	3		11	1			5	2
Monroe,			1													1
Montgomery,	3	13	3	1		2	16	2	23	1	7			20	3	3
Montour,			1			10		16	5			1			3	2
Northampton,											1					
Northumberland,		2	1	1		15	7	8	3		3	1			1	9
Perry,	1	3	3						3						1	1
Pike,				1				46								
Potter,																
Schuylkill,		3	6	1		47	71	51	3		7	5			10	7
Snyder,	3		11	18												2
Somerset,	3	10	14	81		47	53	34	4		2	8			13	34
Sullivan,		1	15	1			2	4								
Susquehanna,				15												2
Tioga,		1	2	11		6			3		1	5		3	5	
Union,						3		11								

Venango,	4	-	1	-	-	18	6	20	-	-	-	-	-	1	-	6
Warren,	11	4	1	48	-	34	5	1	6	-	1	7	-	-	3	15
Washington,	-	-	-	-	-	-	-	2	-	-	1	1	-	2	1	-
Wayne,	-	1	7	13	-	2	-	6	3	-	4	2	-	1	7	4
Westmoreland,	3	9	1	35	-	42	-	3	4	-	2	5	-	-	2	5
Wyoming,	-	2	-	-	-	2	-	-	3	-	-	-	-	-	1	1
York,	-	73	20	45	-	-	13	40	47	-	17	25	-	1	61	36

SUMMARY OF IMPORTANT WORK DONE BY HEALTH OFFICERS IN HANDLING COMMUNICABLE DISEASES IN THE VARIOUS COUNTIES OF THE COMMONWEALTH DURING THE YEAR ENDING DECEMBER 31, 1915.

HEALTH OFFICERS' ANNUAL REPORT BY COUNTIES.

County.	Morbidity reports received.	Premises placarded (Form 36).	Premises quarantined.	Premises disinfected (Form 37).	Rooms disinfected.	Air space in cubic feet.
Totals,	24,285	18,434	18,543	18,043	39,165	43,640,140
Adams,	193	140	134	139	251	255,727
Allegheny,	579	486	476	422	699	1,040,933
Armstrong,	675	453	452	490	1,113	1,349,784
Beaver,	445	345	338	260	404	451,507
Bedford,	341	244	221	254	632	710,130
Berks,	531	318	309	320	530	602,757
Blair,	143	130	137	152	294	352,033
Bradford,	621	403	459	426	789	866,436
Bucks,	1,281	750	758	769	1,080	1,160,681
Butler,	233	195	172	202	566	634,022
Cambria,	837	658	629	613	1,481	1,679,547
Cameron,	19	15	15	9	29	41,199
Carbon,	275	223	223	221	426	416,829
Centre,	296	256	270	253	652	727,566
Chester,	628	513	523	516	997	1,165,113
Clarion,	175	133	133	124	323	381,772
Clearfield,	435	427	427	411	822	1,329,277
Clinton,	100	90	87	74	154	183,400
Columbia,	317	230	224	237	545	577,463
Crawford,	153	143	140	140	395	463,297
Cumberland,	165	160	166	136	323	327,764
Dauphin,	381	237	246	273	655	676,432
Delaware,	203	145	169	129	196	210,219
Elk,	39	36	35	42	153	176,794
Erie,	112	172	183	173	427	477,886
Fayette,	995	782	738	713	1,169	1,342,123
Forest,	46	24	20	31	92	81,400
Franklin,	288	233	227	226	332	421,610
Fulton,	36	25	24	25	61	95,900
Greene,	49	55	47	41	41	117,171
Huntingdon,	253	173	248	158	482	541,152
Indiana,	540	458	440	423	1,104	1,301,827
Jefferson,	195	117	116	158	385	505,144
Juniata,	55	38	42	45	142	165,338
Lackawanna,	54	52	49	51	80	87,766
Lancaster,	925	683	620	702	1,535	2,128,198
Lawrence,	184	131	231	125	372	503,488
Lebanon,	509	444	441	430	627	653,245
Lehigh,	308	258	330	256	689	702,712
Luzerne,	795	707	693	750	1,618	1,747,325
Lycoming,	857	746	740	813	1,113	1,090,903
McKean,	164	98	96	86	266	348,333
Mercer,	195	188	190	167	494	615,571
Mifflin,	284	177	177	173	315	403,092
Monroe,	56	36	37	46	102	140,498
Montgomery,	818	668	668	664	1,046	1,232,012
Montour,	447	103	96	118	201	258,689
Northampton,	605	513	507	351	551	602,612
Northumberland,	393	325	350	347	1,225	1,247,239
Perry,	64	51	35	59	165	182,178
Pike,	31	33	32	26	60	64,470
Potter,	66	60	73	53	163	189,342
Schuylkill,	743	602	604	633	2,479	1,882,584
Snyder,	107	99	77	86	177	259,379
Somerset,	902	615	590	500	1,340	1,612,633
Sullivan,	22	21	21	21	46	45,640
Susquehanna,	140	132	105	403	151	453,954
Tioga,	124	100	103	124	264	321,062
Union,	281	182	197	164	221	259,876
Venango,	321	231	230	205	457	524,096
Warren,	287	169	197	173	616	626,570
Washington,	733	531	530	500	745	974,074
Wayne,	204	130	145	144	291	385,880
Westmoreland,	1,219	907	911	840	1,157	1,482,627
Wyoming,	200	147	150	163	1,483	432,864
York,	673	485	490	507	1,120	1,347,995

DIVISION OF VITAL STATISTICS.

BUREAU OF VITAL STATISTICS.

WILMER R. BATT, *State Registrar.*



GENERAL SUMMARY.

Deaths registered, indexed and tabulated (including still-births),	125,078
Births registered, indexed and tabulated (including still-births),	227,258
Marriages registered, indexed and tabulated,	65,677
Total records registered, tabulated, indexed and permanently filed,	418,013

Additional Records Tabulated.

Medical inspection of school children,	521,487	
Sanitary inspection of school buildings,	20,277	
Tuberculosis sanatorium cases,	3,844	
Tuberculosis dispensary cases,	11,665	
Tuberculosis follow-up records,	12,415	
Cases of communicable diseases,	141,340	
		711,028
Total records tabulated,		1,129,041

Certified copies,	7,351
Fees returned to the State Treasurer for certified copies and searches,	$3,697 50

MORTALITY.

The year 1915 ends the first decade of complete mortality accounting for the State. It is a convenient period and of sufficient length for a review of whatever progress has been made in reducing the hazards of preventable disease and premature death as well as summarizing the very material service which has accrued to our people through the registration of vital statistics. The knowledge gathered from the records of the 1,144,772 deaths which have been registered during this period concerning the fatal nature of disease in relation

to age, sex, color, nativity, occupation and locality must be of considerable significance in directing the future work of prevention along the lines of greatest opportunity.

It is a source of gratification to know that the general death rate of 13.8 in each one thousand of population for 1915 was the lowest annual rate for the ten-year period. As compared with 16.0, the rate for 1906, it presents a decline of 13.8 per cent.

When it is recalled, however, that public health work is directed mainly against diseases whose preventability is possible along well-defined lines, and that these diseases are responsible for approximately one-third of the total deaths which occur from all causes, any inquiry into the results obtained as the result of sanitary effort should be based upon the evidence found in this particular group of causes.

For this reason a statistical survey under the title of a sanitary index has been prepared for each of the several years from 1906 to 1915, inclusive, for the State as a whole, for certain groups of population and for each municipality of more than 10,000 population, which fairly illustrates the real progress in preventive work.

For the ten-year period the social and legal identity of more than two million (2,006,321) living children has been established by birth registration. While the individual service thus rendered to the future citizens of the State is paramount to any other consideration, complete and accurate birth registration consits also of information as to the quantity and quality of the material.

The inability to establish by official records the time, place and circumstances of birth has too frequently in the past handicapped many of our people. The coming generations will not labor under such a disadvantage.

As an important corollary to the registration of births and deaths, complete records of 623,725 marriages performed in the State during the period 1906 to 1915, inclusive, have been brought together from the sixty-seven counties, indexed and permanently filed.

The fundamentals of vital statistics are, therefore, in the comparatively short period of ten years firmly established as a public service in Pennsylvania. It remains to perfect them by systematically bringing together the divorces granted, and thus establish a firm basis of special inquiries into many problems arising from the complexities of our social, economic and industrial condition.

A reference to the table showing the death rates per 100,000 of population for the several groups of diseases as classified by the International Classification of the Causes of Death shows that the rates for the year 1915 rather consistently followed the direction indicated by the rates for the previous years of the decade. Group 1 embracing what is known as General Diseases exhibits a gratifying declining tendency in rates, in spite of the fact that it includes deaths from

cancer, which, as will be noted by reference to the specific rates from this cause, has shown a notable increase from year to year and which amounts to 26% for the extremes of the ten-year period.

The decline in the death rate in Group 12 does not mean that fewer persons in our population are reaching the extreme limits of life, but that greater care has been exhibited by physicians in stating the diseased conditions existing and therefore fewer deaths are ascribed simply to old age.

A reference to the table showing the death rates per 1,000 of population at definite age periods shows that but once in the ten-year period was the rate for 1915 of persons over 85 years exceeded.

The decline in the death rate from ill-defined diseases (Group 15) reflects a very consistent improvement in the medical statements as to the causes of death and also fewer deaths from "unknown" diseases.

The population, total deaths and death rates (exclusive of still-births) for the ten-year period 1906 to 1915, inclusive, were as follows:

	Population.	Total Deaths.	Death Rate.		Population.	Total Deaths.	Death Rate.
1906,	7,141,766	114,435	16.0	1911,	7,831,904	111,292	14.2
1907,	7,249,792	115,969	15.9	1912,	7,969,942	111,842	14.0
1908,	7,417,816	112,246	15.1	1913,	8,107,980	117,995	14.5
1909,	7,555,841	111,062	14.7	1914,	8,246,018	114,832	13.9
1910,	7,693,863	119,815	15.6	1915,	8,383,992	115,284	13.8

Deaths by months and quarters with corresponding annual rates.

	By Months.		By Quarters.		By Months.		By Quarters.
	Deaths.	Rates.	Rates.		Deaths.	Rates.	Rates.
January,	9,704	13.6		July,	8,467	11.9	
February,	9,503	14.8	14.8	August,	9,180	12.9	12.7
March,	11,383	15.9		September,	9,246	13.4	
April,	11,355	16.5		October,	9,074	12.7	
May,	8,863	12.4	13.9	November,	8,875	12.9	14.0
June,	8,061	11.6		December,	11,633	16.3	

TOTAL DEATHS FOR CERTAIN GROUPS OF DISEASES, INTERNATIONAL CLASSIFICATION, FOR THE YEARS 1906 TO 1915, INCLUSIVE.

	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.
I General diseases,	29,756	29,287	28,575	26,756	28,710	27,495	25,823	28,351	26,859	27,139
II Diseases of the nervous system and of the organs of special sense,	11,880	12,227	11,372	11,496	11,726	11,061	11,269	11,016	10,899	11,045
III Diseases of the circulatory system,	10,687	11,777	11,345	12,061	12,755	12,989	13,755	13,445	14,653	15,324
IV Diseases of the respiratory system,	13,840	14,384	13,929	14,837	16,605	14,210	14,904	15,623	15,156	15,432
V Diseases of the digestive system,	17,263	16,037	16,306	15,769	18,559	15,168	14,822	16,243	14,971	14,343
VI Nonvenereal diseases of the genitourinary system and annexa,	7,219	7,659	7,553	7,897	8,414	8,292	8,690	9,594	9,475	9,826
VII Puerperal state,	1,213	1,312	1,460	1,434	1,441	1,296	1,252	1,422	1,446	1,401
VIII Diseases of the skin and cellular tissue,	568	515	534	525	504	472	549	596	537	526
IX Diseases of the bones and of the organs of locomotion,	204	185	214	207	188	176	194	236	223	255
X Malformations,	1,572	1,496	1,544	1,570	1,467	1,345	1,389	1,500	1,808	1,650
XI Early infancy,	5,518	5,604	5,598	5,438	6,127	6,946	7,563	8,005	7,761	7,570
XII Old age,	1,448	1,622	1,494	1,364	1,395	1,407	1,365	1,351	1,152	1,228
XIII External causes,	10,180	10,863	9,631	9,145	9,217	9,351	9,179	9,605	9,055	8,847
XIV Ill-defined diseases,	3,147	2,998	2,691	2,563	2,696	1,081	1,088	1,207	854	704

DEATH RATES PER 100,000 OF POPULATION FOR CERTAIN GROUPS OF DISEASES, INTERNATIONAL CLASSIFICATION, FOR THE YEARS 1906 TO 1915, INCLUSIVE.

	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.
I General diseases,	416.6	402.3	385.2	354.1	373.1	351.1	324.0	349.7	325.7	323.7
II Diseases of the nervous system and of the organs of special sense,	166.3	167.9	153.3	152.2	152.4	141.3	141.4	135.9	132.1	131.7
III Diseases of the circulatory system,	149.3	161.7	152.9	159.6	165.7	165.8	172.6	165.9	177.7	182.8
IV Diseases of the respiratory system,	193.7	197.5	187.7	196.3	215.8	181.4	187.0	192.7	181.4	182.8
V Diseases of the digestive system,	241.7	220.2	219.8	208.6	241.2	193.7	186.0	200.3	181.5	171.1
VI Nonvenereal diseases of the genitourinary system and annexa,	101.1	105.2	101.8	104.5	109.3	105.9	109.0	118.3	114.9	117.2
VII Puerperal state,	16.9	18.0	19.6	18.9	18.7	16.5	15.7	17.5	17.5	16.7
VIII Diseases of the skin and cellular tissue,	7.1	7.1	7.1	6.9	6.5	6.0	6.9	7.3	6.5	6.2
IX Diseases of the bones and of the organs of locomotion,	2.8	2.5	2.8	2.7	2.4	2.2	2.4	2.9	2.7	3.0
X Malformations,	22.0	20.5	20.8	20.7	19.1	17.2	17.4	18.5	21.9	19.7
XI Early infancy,	77.2	76.9	75.4	71.9	79.6	88.7	94.9	98.7	94.1	90.8
XII Old age,	20.2	22.2	20.1	18.0	18.1	18.0	17.1	16.6	13.9	14.6
XIII External causes,	142.4	149.2	129.8	121.3	119.7	119.4	115.2	118.4	109.8	105.5
XIV Ill-defined diseases,	44.1	41.1	36.1	33.9	35.0	13.8	13.6	12.4	10.4	8.4

DEATH RATES PER 1,000 OF POPULATION AT CORRESPONDING AGES 1906 TO 1915, INCLUSIVE.

	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.
Under 5 years, --	48.5	44.7	45.3	42.1	45.3	43.5	36.5	39.7	35.8	33.0
5 to 14 years, --	3.3	3.0	3.1	2.7	2.9	2.6	2.6	2.9	2.7	2.4
15 to 24 years, --	6.1	6.0	5.3	4.6	4.6	4.5	4.2	4.2	3.9	3.8
25 to 34 years, --	7.0	7.9	7.0	6.3	6.7	6.2	5.9	6.0	5.8	5.7
35 to 44 years, --	10.1	10.9	9.5	9.3	9.5	9.2	8.5	8.9	8.6	8.6
45 to 54 years, --	14.8	15.6	14.9	14.5	15.0	14.5	13.8	14.2	13.9	14.0
55 to 64 years, --	30.2	30.5	27.8	27.5	27.8	27.0	28.0	28.0	27.8	27.2
65 to 74 years, --	54.4	63.5	58.7	58.0	61.3	60.0	60.0	60.0	60.0	61.0
75 to 84 years, --	133.4	140.8	134.6	131.5	131.6	125.8	131.4	122.1	120.2	132.4
85 years and over,	282.9	308.6	283.7	330.2	300.2	293.0	287.3	244.4	239.0	310.7

A SANITARY INDEX AS A METHOD OF MEASURING THE EFFICIENCY OF PUBLIC HEALTH WORK.

The equalities involved in the exchange of commodities through barter and trade, no less than through the development of the arts and sciences, have all combined to create fixed standards of measurements of both forms and values. For example, the pound and the yard with their subdivisions or multiples are accepted expressions which convey a definite sense of quantity. So too the word rate or ratio has been recognized as indicating a sense of proportion between units of value and units of quantity. Cents a pound or miles an hour are statements of relation indicating rates of cost or rates of speed.

Such is our present desire for basic truths that we endeavor in countless ways so to classify and analyze human effort that new measures of efficiency may be established and applied. In mortality accounting the ordinary standard of measurement is found in the general population, and the death rate is simply a statement as to the number of persons dying in any fixed period of time, usually one year, in each unit of one thousand persons. The reduction of the death rate has been made the objective of highly specialized effort by public agencies, but the true effectiveness of this effort as manifested within definite areas has not heretofore been consistently estimated, principally through failure to develop and apply a practical standard of measurement. The general or crude death rate, including deaths from all types of disease, from old age as well as from all forms of violence, accidental or otherwise, certainly does not form such a standard, although it is the most frequently employed method of expression in popular discussions of the value of public health work. It represents the simplest form of mortality accounting, and, without an appreciation of its insignificance, it has been most thoroughly misapplied.

To a certain extent the endeavor has been made to remedy this deficiency in presenting statistics relative to sanitary progress by tracing the individual course of some of the most prominent transmissible diseases, such as typhoid fever, tuberculosis and diphtheria, but the results have been very far from presenting a composite picture which would fairly indicate the sum total of accomplishment in preventive work of a public character to which santarians as well as the people themselves are entitled.

The adopted field of public health activities embraces a group of affections which, from a knowledge of their causes and methods of transmission, have been classed as preventable. More definitely stated, this group includes the acute communicable diseases of the epidemic type and tuberculosis (being the titles numbered 1 to 15 in

the Abridged International Classification of the Causes of Death with the exception of No. 9, influenza) and, in addition to these, the deaths of infants under one year of age not included in the above. Beyond this group there exists a rather extensive variety of diseases, the occurrence of many of which may be influenced by general educational effort to promote personal hygiene. The group first indicated, however, absorbs the maximum of effort and resources, and the sum total of deaths from these causes may be regarded as a fair index of the efficiency in conserving life and health through public agencies.

In the following statistical review of mortality in Pennsylvania, covering the period 1906 to 1915, inclusive, deaths from the limited group of causes mentioned have been brought together and their ratio to each thousand of population has been styled the "Sanitary Index Rate;" and the deaths from all other causes exclusive of those above included, treated in the same manner, have supplied the "Residual Death Rate." The sum total of these two rates will consequently correspond to the general or crude death rate.

Pennsylvania presents the rather unique picture of one agency (the State Department of Health) responsible for the direct administration of the public health affairs for 2,644,611 of its population distributed through the length and breadth of its domain in 1,556 townships, and 939 individual agencies (local boards and departments of health) charged with the same duties for 5,739,871 of its population distributed in an equal number of restricted areas known as boroughs or cities. The former constitutes what is known strictly as the "Rural" and the latter the "Urban" population of our State.

The fundamental laws of the State provide, so far as laws can possibly do, for the management and control of those communicable diseases which are the direct object of public concern, and apply equally to all portions of the State irrespective of the agency through which they may be administered. The State Department of Health has at its command no greater legal resources than the smallest borough, and the efficiency of administrative effort can in no way depend upon legislative discrimination between the several political units. While it is true that the State Department of Health has also supervisory control in health affairs over all the municipalities of the State and that this control may become active upon the failure of any individual localilty to perform its duties in public health affairs; theoretically, each of the 939 cities and boroughs should fulfill certain specific obligations within its borders, while at the same time all are equal beneficiaries of the State's activities in the protection of their water, milk and food supplies, the distribution of antitoxins and vaccines, the maintenance of laboratories, the treatment of tuberculosis, and the manifold benefits arising from a constant and wide exercise of a sanitary guardianship.

A clear understanding of these facts is essential to an appreciation of the evidence which will be developed in this survey concerning the effectiveness of public health administration in the several units of our population. As the resources available for the administration of all public health affairs are dependent in a very considerable degree upon the unit of population involved, municipalities of relatively the same size should be fairly comparable. The following groups of population have therefore been created:

Group 1. Composed of 4 municipalities each having more than 100,000 population.

Group 2. Composed of 8 municipalities each having between 50,000 and 100,000 population.

Group 3. Composed of 9 municipalities each having between 25,000 and 50,000 population.

Group 4. Composed of 41 municipalities each having between 10,000 and 25,000 population.

Group 5. Composed of 877 municipalities each having less than 10,000 population.

Group 6. Composed of 1,556 townships—rural population.

Out of a total State population in 1915 estimated at 8,384,482, we find that the several groups have the following populations and percentages of total:

Group 1,	2,504,916—29.9%
Group 2,	506,579— 6.0%
Group 3,	291,821— 3.5%
Group 4,	701,128— 8.4%
Group 5,	1,735,427—20.7%
Group 6,	2,644,611—31.5%

We have therefore in Group 6 one agency, the State Department of Health, in direct responsibility for 31.5% of our population—4 municipalities (Group 1) being responsible for 29.9%, 58 municipalities (Groups 2, 3 and 4) for 17.9%, and 877 municipalities (Group 5) for 20.7%.

In considering the distribution of population it should also be borne in mind that while the average population of the municipalities included in Group 5 is approximately 2,000, there are in Group 6 very many villages of equal and even greater population, the question of incorporation as a municipality depending upon the wishes of the community and not necessarily upon the number of inhabitants. Groups 2, 3 and 4 might be consolidated, if it were not that there is something of an individuality in the rates for these groups which makes their segregation advisable.

The proportionate number of deaths involved in the construction of the Sanitary Index in 1906 was 40.5% of the total of 114,406 from all causes. In 1915 it was 32.5% of a similar total of 115,284. One death in every three occurring in the State has therefore been employed in its construction.

Perhaps the value of applying a "yard stick," such as the Sanitary Index, to a gross population containing so many administrative agencies as exist in our State is not so great as when measuring the efficiency in individual localtes wth single agencies in control; but as every composite picture awakens curiosity as to the individual elements entering into it, the rates for the State as a whole and for the several groups may well precede a more detailed examination of individual localities.

In Chart I the Sanitary Index rates are presented graphically for the ten-year period 1906 to 1915, inclusive, for the State as a whole and for each of the several groups of population. The general death rate during this period declined from 16.0 per 1,000 population to 13.8, a reduction of 13.8%. During the same period the Sanitary Index declined from 6.0 to 4.5, a reduction of 30.8%, while the residual death rate declined from 9.5 to 9.3, a reduction of but 2.1%. The application of the percentage of reduction which occurred in the Sanitary Index to the residual deaths would have given us a general death rate of 11.1 in place of 13.8.

It is therefore apparent that almost the entire reduction that has taken place in the general death rate has been due to the decline in the deaths from those diseases that are the objects of sanitary attack, and when we employ only the general death rate as an expression of progress in public health work, we fail utterly properly to measure the returns accruing from sustained and intelligent expenditures of both knowledge and money in this direction.

By the segregation of the causes of death into two groups we are also bringing into due prominence through the residual death rate the necessity for safeguarding industrial workers and for personal hygiene on the part of individuals, an object of great concern in improving racial vitality, but unfortunately at the present time one of uncertain acceptance. Old age should be the preeminent cause to be attained in this group.

The tremendous impetus given in Pennsylvania to municipal public health work in 1905 by the creation of a centralized authority in the State Department of Health, with ample powers and appropriations, but which were not effective for a full calendar year until 1906, is almost immediately reflected in the closer approximation of the sanitary index rates of Groups 1 to 5. The influence of supervisory control by the State and a more appreciative sense of responsibility to the same authority on the part of municipal health organizations is very apparent.

The curves on Chart I for the Groups 1 to 5, inclusive, show that for the year 1906 there was a divergence of 2.8 between the rates for the highest and lowest groups. In 1915 the divergence was only 0.6,

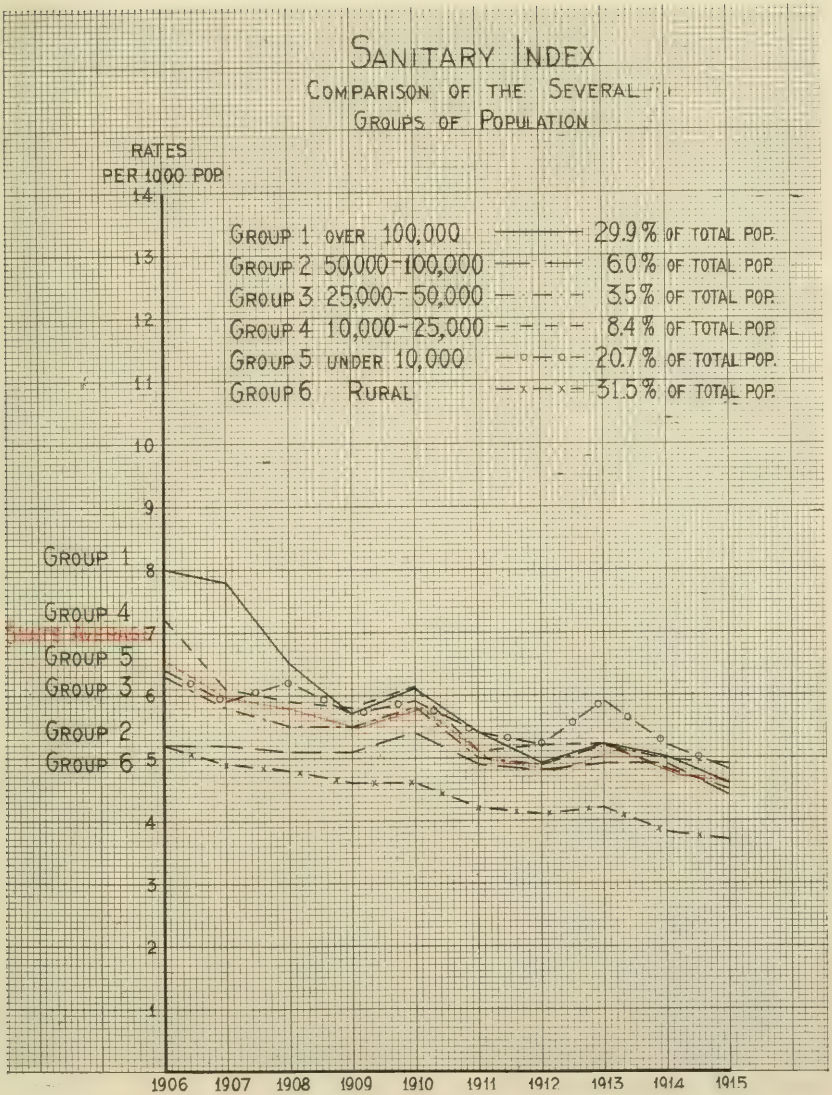


CHART I.—The Sanitary Index of the State, as a unit (in red), and of the several groups of population, with the percentage in each group relative to the population of the State for the period 1906-1915, inclusive.

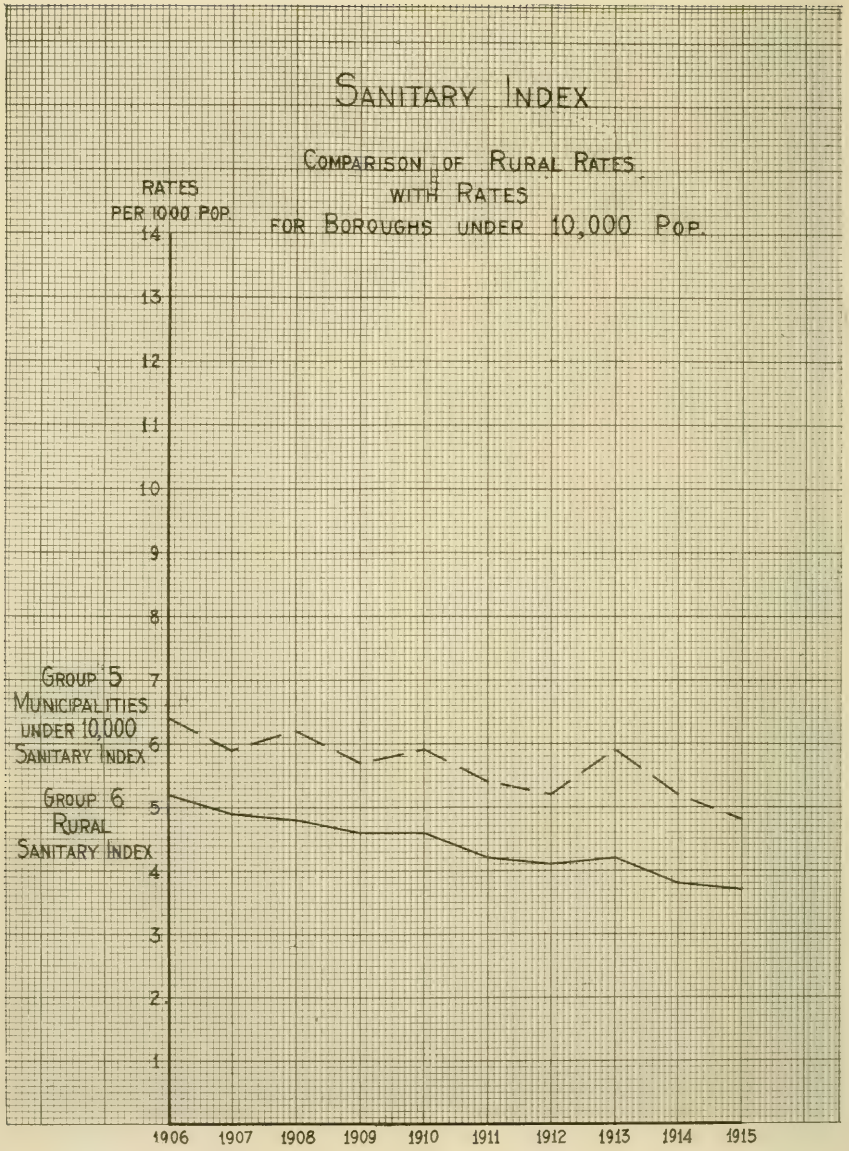


CHART II.—The Sanitary Index of Group 5, composed of 877 boroughs, each of less than 10,000 population, and forming an aggregate of 20.7% of the population of the State, compared with the Sanitary Index of Group 6, comprising the rural sections of the State in 1556 townships, with an aggregate of 31.5% of the population of the State.

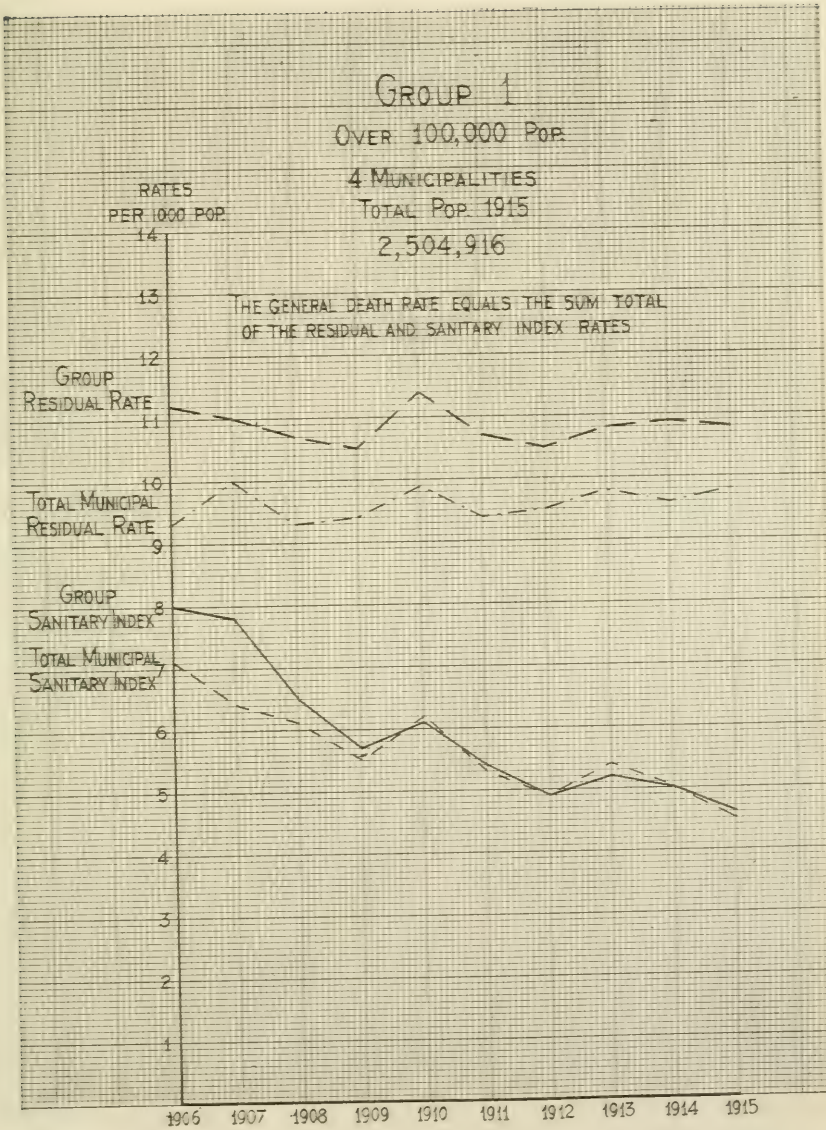


CHART III.—The Sanitary Index and Residual Death Rate of Group 1, comprising 29.9% of the population of the State, compared with the Sanitary Index and Residual Death Rate for all Municipalities.

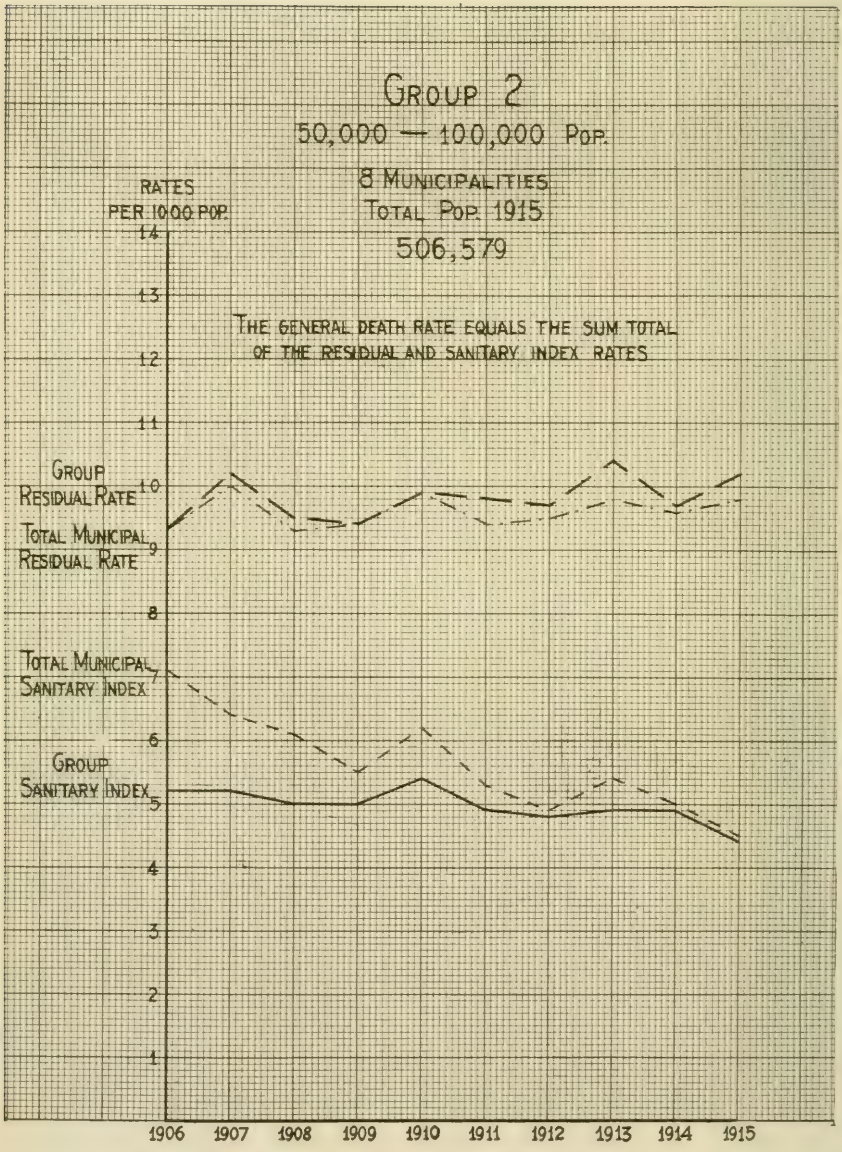


CHART IV.—The Sanitary Index and Residual Death Rate of Group 2, comprising 6.0% of the population of the State, compared with the Sanitary Index and Residual Death Rate for all Municipalities.

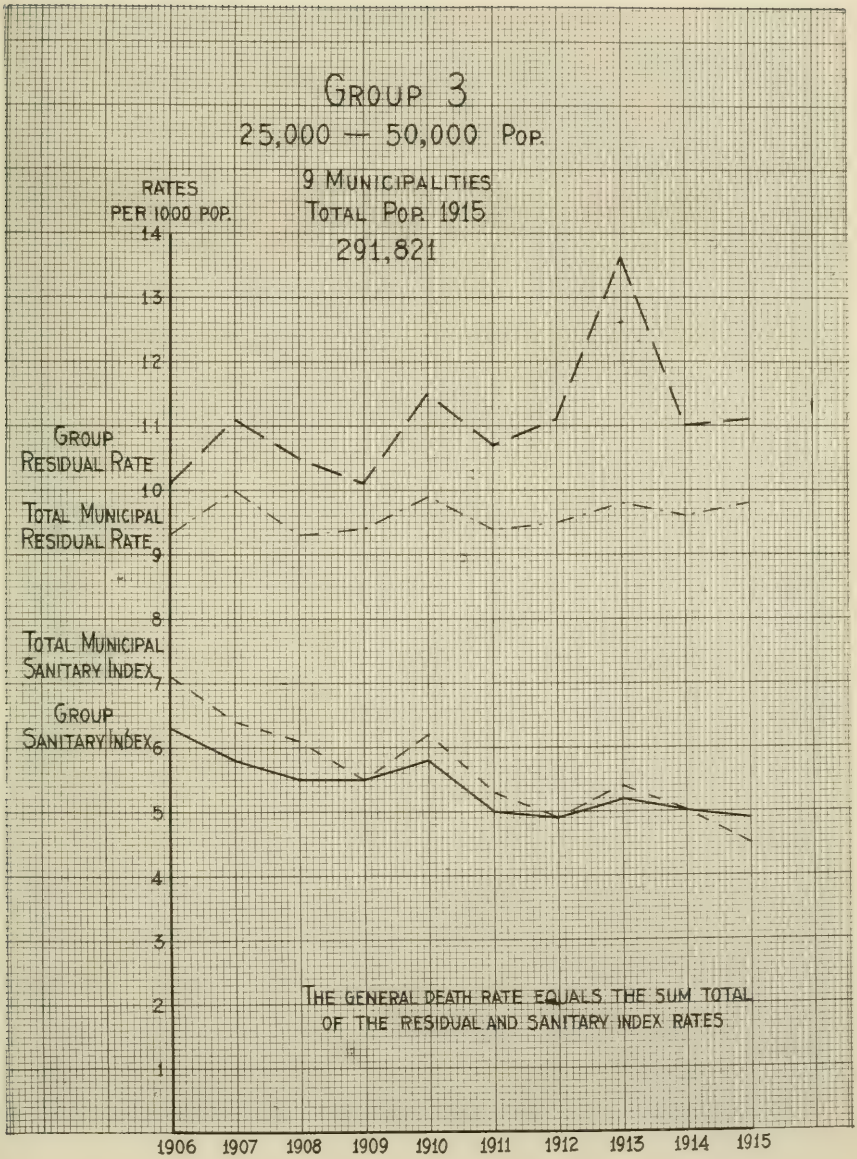


CHART V.—The Sanitary Index and Residual Death Rate of Group 3, comprising 3.5% of the population of the State, compared with the Sanitary Index and Residual Death Rate for all Municipalities.

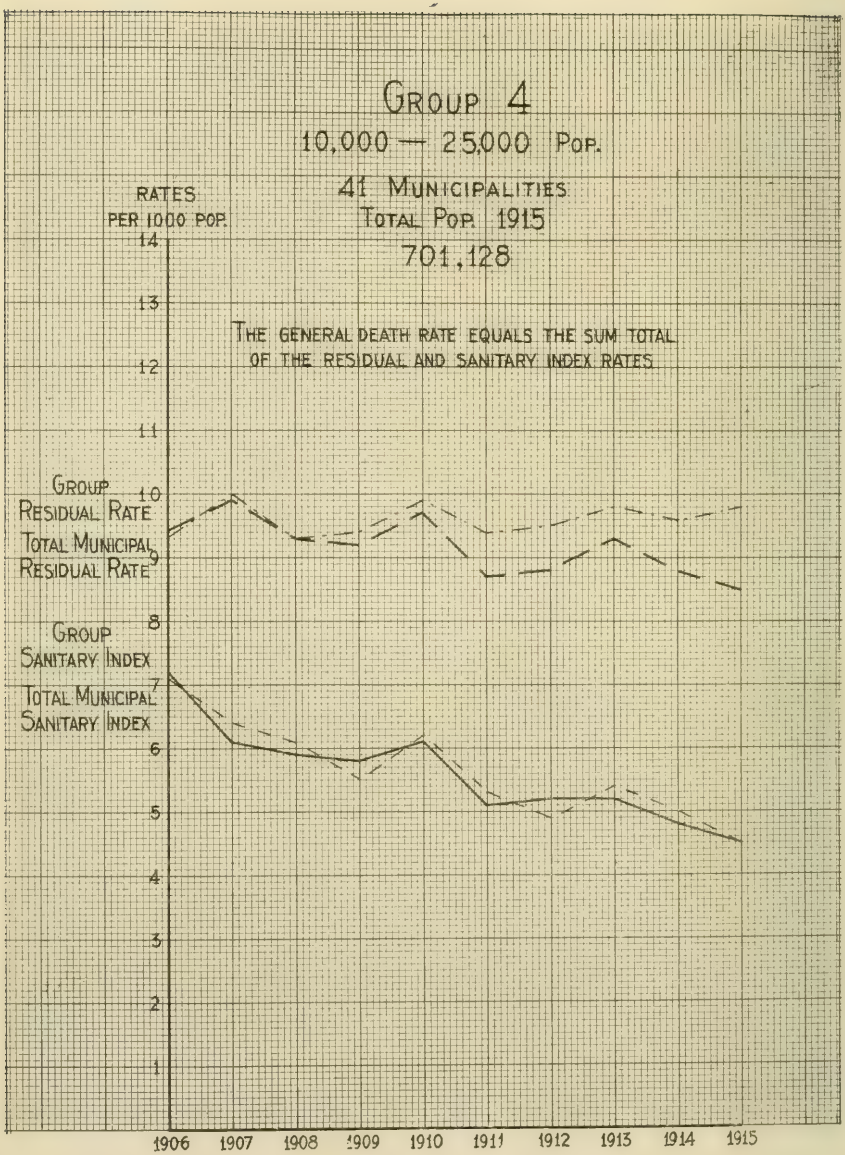


CHART VI.—The Sanitary Index and Residual Death Rate of Group 4, comprising 8.4% of the population of the State, compared with the Sanitary Index and Residual Death Rate for all Municipalities.

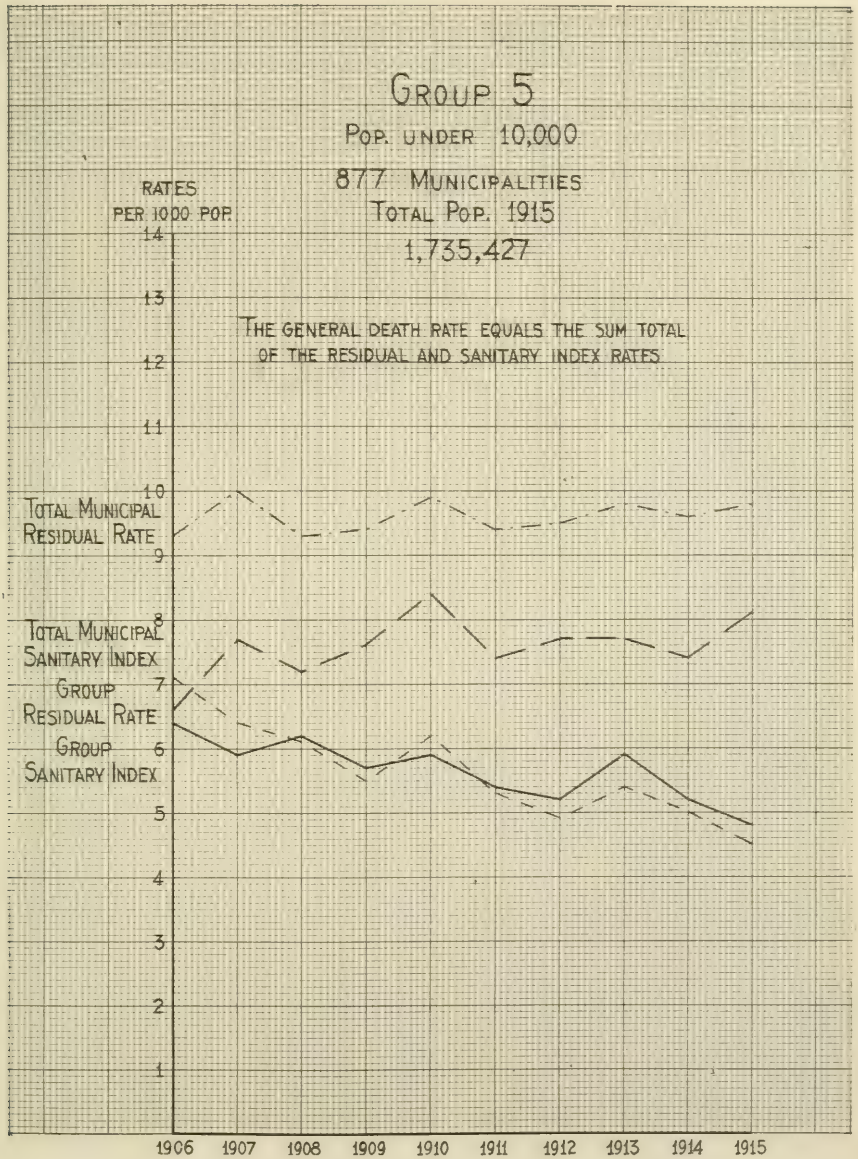


CHART VII.—The Sanitary Index and Residual Death Rate of Group 5, comprising 20.7% of the population of the State, compared with the Sanitary Index and residual Death Rate for all Municipalities.

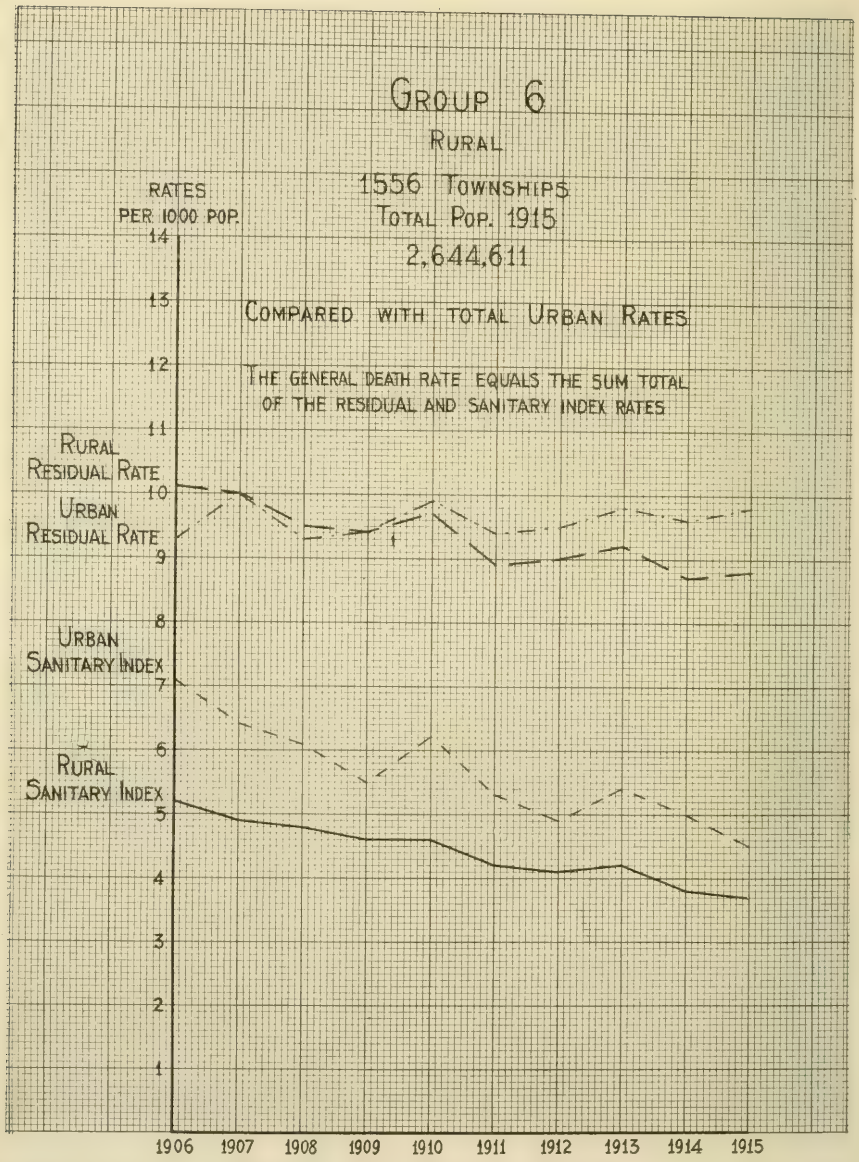


CHART VIII.—The Sanitary Index and Residual Death Rate of Group 6, comprising 31.5% of the population of the State, compared with the Sanitary Index and Residual Death Rate for all Municipalities.

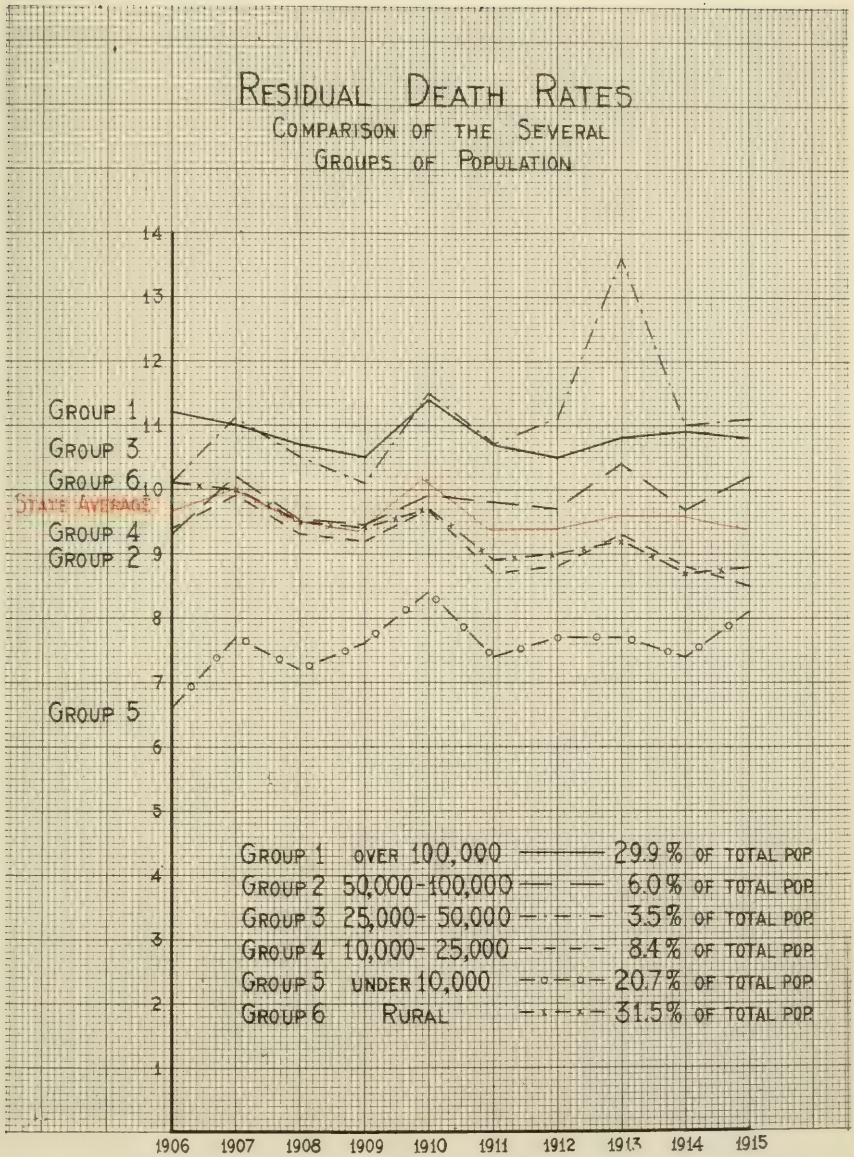


Chart IX.—The Residual Death Rate of the State, as a nuit (in red), and of the several groups of population, with the percentage in each group relative to the population of the State for the period 1906-1915, inclusive.

indicating that there has been an evident coordination of public health effort in all groups, with a progressive downward trend distinctly more marked in some than in others.

In 1910 the rates for each of the groups (1 to 5) increased over the previous year, but not all groups increased equally—Group 1 increased 0.4, Groups 2, 3 and 4 increased 0.3 and Group 5 increased 0.2.

The next interruption to the downward tendency in the several groups occurred in 1913, in which year Group 4 remained stationary. Group 2 increased 0.1, Groups 1 and 3 increased 0.3 and Group 5 broke away from its fairly close association with other groups and increased 0.7.

This chart emphasizes the position of the rural population (Group 6), which, starting level with Group 2 in 1906, at once pursues a progressive downward course unaffected by the rise in the other groups for the year 1910, and but 0.1 by the increase in 1913.

In Chart II a comparison is made between Group 5 and Group 6, for the reason that sanitary administration in Group 5 through independent agencies develops a course quite at variance with a single agency in control of 1,556 units of population.

The conditions in life in the vast majority of the municipalities included in Group 5 differ in no way from the conditions which prevail in the villages included in Group 6. The problems of sanitation are in no way more difficult, and as compared with Groups 1 to 4 should be much easier of solution.

Charts III to VIII, inclusive, illustrate the sanitary index and residual rates of the several groups of population in comparison with the combined rates for all municipalities.

The downward tendency with extremely slight fluctuations in the rural sanitary index and with a satisfactory proportion in relation to the residual death rate closely approximates the ideal in sanitary progress.

Group 2 presents the smallest percentage of improvement, due largely to the favorable position which it occupied in 1906 in relation to other municipal groups. The standing of the groups in this respect, both as to sanitary index and residual rates, is interesting.

	Sanitary Index Percentage Decrease, 1906-1915.	Residual Rates Percentage Increase or Decrease, 1906-1915.
Group 1,	—42.5%	— 3.6%
Group 2,	—15.4%	+ 9.7%
Group 3,	—20.6%	+ 9.9%
Group 4,	—37.5%	— 9.6%
Group 5,	—25.0%	+22.7%
Group 6,	—28.9%	—12.9%
The State as a whole,	—39.9%	— 2.1%

The course in Group 5, the only one presenting three peaks in the period under consideration, arouses the greatest concern because of the very large number of individual agencies and the small primary units of population involved. While the reduction of 25.0% in the sanitary index compares favorably with the decline in other groups, an important element to be considered exists in the fact that during the years 1914 and 1915 the State Department of Health was obliged to exercise its conditional authority by assuming and maintaining control of sanitary affairs in 140 municipalities within this group. The decline for the period terminating in 1914 was only 18.8%. When we further consider that 677 out of a total of 877 municipalities in this group have populations less than 2,500, the question of securing in such small units the adequate resources of ability, appropriations or community sentiment for the performance of active sanitary work is in the majority of instances extremely doubtful. On the other hand, the existence of such a large number of possibly unguarded foci of infection constitutes a menace to the entire State which may well be viewed with serious apprehension.

When we leave the study of groups and consider the records of the individual municipalities having more than 10,000 population, we are instantly impressed with the wide variations in the sanitary index which are not so apparent in group curves. In the appended tabulation the sanitary index and residual rates are shown for each such municipality and also for the group to which each municipality belongs so as to indicate the position occupied in relation to similarly populated areas.

In interpreting the sanitary index for any individual locality three points may be considered: the relation of the sanitary index rate to the same group rate; the relation of the sanitary index rate to the residual death rate; and the existence of peaks in the sanitary index, as these beyond doubt illustrate the occurrence of epidemics.

A high sanitary index as compared with the corresponding group rate is evidence of non-existent or ineffective sanitary effort. While this condition is to be found most frequently in localities having a high proportion of foreign or colored population, there are some notable exceptions which demonstrate that the two conditions are not inseparable. It is true that the habits and circumstances of life among the foreign born do not always favor sanitary administration, but it is equallly true that wherever such handicaps do exist they should be counterbalanced by greater effort and more abundant resources. A strikingly erratic sanitary index rate, although its general course as indicated by its extreme points may be downwards, is indicative that epidemics have found an open door and fertile breeding ground.

In Chart IX a comparison is made of the residual death rates for the several groups of population and the State as a whole.

There will always be some individuality to the residual rates of any locality just as there will always be some individuality to a local population as regards age or sex distribution, and composition as to color, nativity and occupations, all of which are factors of more or less influence in the determination of such rates.

The deaths of non-residents occurring in hospitals also have a distinct influence on the residual rates of certain groups. This is emphasized by the erratic course of the curve for Group 3 composed of a small number of municipalities whose hospital facilities are extensively utilized by adjacent populations.

The greatest increase in the residual rate occurs in Group 5 in which hospital deaths, however, play no part, as the units of population are too small to maintain such institutions. An unfavorable age distribution through the retirement of aged people from the farms to the smaller municipalities is the most important factor in the maintenance of a relatively high rate for this group.

31—16—1918

TABULATION OF MUNICIPALITIES HAVING A POPULATION OF 10,000 OR MORE, SHOWING THE SANITARY INDEX AND THE VARIOUS RATES OF EACH PLACE AND OF THE GROUP TO WHICH IT BELONGS.*

	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.
ALLENTOWN.										
General death rate,	15.4	16.6	15.9	14.8	16.8	15.4	14.7	16.1	15.0	16.0
Sanitary index,	6.4	6.6	6.6	6.0	6.2	5.8	5.7	5.9	5.0	5.3
Group sanitary index,	6.3	5.8	5.5	5.1	5.4	4.9	4.8	4.9	4.9	4.4
Residual rate,	9.0	10.0	9.3	8.8	10.6	9.6	9.0	10.2	10.0	10.7
Group residual rate,	10.1	11.1	10.5	9.4	9.9	9.8	9.7	10.4	9.7	10.2
ALTOONA.										
General death rate,	14.7	13.9	13.3	11.8	12.6	11.7	13.9	13.5	14.3	12.3
Sanitary index,	5.9	4.9	5.4	4.1	4.6	3.5	4.2	4.9	5.2	3.2
Group sanitary index,	6.3	5.8	5.1	5.1	5.4	4.9	4.8	4.9	4.9	4.4
Residual rate,	8.8	9.0	7.9	7.7	8.0	8.2	9.7	8.6	9.1	9.1
Group residual rate,	10.1	11.1	9.5	9.4	9.9	9.8	9.7	10.4	9.7	10.2
BEAVER FALLS.										
General death rate,	13.3	13.2	13.3	11.5	13.7	13.3	14.9	14.6	14.3	13.4
Sanitary index,	4.8	6.3	5.0	4.3	5.4	5.5	5.5	5.3	4.4	4.6
Group sanitary index,	7.2	6.1	5.9	5.8	6.1	5.1	5.2	5.2	4.8	4.5
Residual rate,	8.5	6.9	8.3	7.2	8.3	7.8	9.4	9.3	9.9	8.8
Group residual rate,	9.4	9.9	9.3	9.2	9.7	8.7	8.8	9.3	8.8	8.5

BETHLEHEM.										
General death rate,	----	----	----	----	13.2	13.8	10.6	12.6	12.9	11.2
Sanitary index,	----	----	----	----	3.8	4.1	3.5	3.0	3.8	3.1
Group sanitary index,	----	----	----	----	6.1	5.1	5.2	5.2	4.8	4.5
Residual rate,	----	----	----	----	9.4	9.7	7.1	9.6	8.1	8.1
Group residual rate,	----	----	----	----	9.7	8.7	8.8	9.3	8.8	8.5
BRADDOCK.										
General death rate,	24.7	25.6	21.9	21.6	21.0	17.8	18.7	23.2	17.5	18.1
Sanitary index,	13.4	11.8	9.7	10.8	9.5	8.5	6.9	8.6	6.5	8.0
Group sanitary index,	7.2	6.1	5.9	5.8	6.1	5.1	5.2	5.2	4.8	4.5
Residual rate,	11.3	13.8	12.2	10.8	11.5	9.3	11.8	14.6	11.0	10.1
Group residual rate,	9.4	9.9	9.3	9.2	9.7	8.7	8.8	9.3	8.8	8.5
BRADFORD.										
General death rate,	14.0	12.5	12.7	14.2	13.1	14.6	14.6	13.7	15.1	14.6
Sanitary index,	3.7	2.3	2.7	3.3	2.5	2.5	3.2	2.6	3.2	2.7
Group sanitary index,	7.2	6.1	5.9	5.8	6.1	5.1	5.2	5.2	4.8	4.5
Residual rate,	10.3	10.2	10.0	10.9	10.6	12.1	11.4	11.1	11.9	11.9
Group residual rate,	9.4	9.9	9.3	9.2	9.7	8.7	8.8	9.3	8.8	8.5
BUTLER.										
General death rate,	15.9	15.9	13.1	12.9	15.4	10.9	10.4	10.7	11.5	9.6
Sanitary index,	5.8	5.4	5.1	5.3	6.6	4.2	4.2	3.6	3.6	3.1
Group sanitary index,	7.2	6.1	5.9	5.8	6.1	5.1	5.2	5.2	4.8	4.9
Residual rate,	10.1	10.5	8.0	7.6	8.8	6.7	6.2	7.1	7.9	6.5
Group residual rate,	9.4	9.9	9.3	9.2	9.7	8.7	8.8	9.3	8.8	11.1

TABULATION OF MUNICIPALITIES—Continued.

	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.
CARBONDALE.										
General death rate,	18.9	16.6	15.9	16.0	19.1	16.8	15.1	16.3	15.8	14.9
Sanitary index,	7.5	5.1	5.1	5.4	4.6	3.5	3.9	3.9	3.9	3.8
Group sanitary index,	7.2	6.1	5.9	5.8	6.1	5.1	5.2	5.2	4.8	4.5
Residual rate,	11.4	11.5	10.8	10.6	14.5	13.3	11.2	12.4	11.9	11.1
Group residual rate,	9.4	9.9	9.3	9.2	9.7	8.7	8.8	9.3	8.8	8.5
CARLISLE.										
General death rate,	13.8	17.0	15.7	15.7	16.1	16.5	15.5	14.9	14.4	14.2
Sanitary index,	4.0	5.5	3.1	3.8	3.8	3.7	3.7	4.9	3.1	2.4
Group sanitary index,	7.2	6.1	5.9	5.8	6.1	5.1	5.2	5.2	4.8	4.5
Residual rate,	9.8	11.5	12.6	11.9	12.3	12.8	11.8	10.0	11.3	11.8
Group residual rate,	9.4	9.9	9.3	9.2	9.7	8.7	8.8	9.3	8.8	8.5
CARNEGIE.										
General death rate,	----	----	----	----	13.4	8.9	14.1	12.9	10.3	12.1
Sanitary index,	----	----	----	----	6.5	5.2	7.1	5.7	4.4	6.2
Group sanitary index,	----	----	----	----	6.1	5.1	5.2	5.2	4.8	4.5
Residual rate,	----	----	----	----	6.9	3.7	7.0	7.2	5.9	5.9
Group residual rate,	----	----	----	----	9.7	8.7	8.8	9.3	8.8	8.5

CHAMBERSBURG.										
General death rate,	17.9	14.9	16.3	16.9	16.3	16.4	17.2	14.5	[illegible]	14.2
Sanitary index,	6.3	5.0	4.7	4.0	4.5	3.9	4.6	4.0	4.1	5.8
Group sanitary index,	7.2	6.1	5.9	5.8	6.1	5.1	5.2	5.2	4.8	4.6
Residual rate,	11.6	9.9	11.6	12.9	11.8	12.5	12.6	10.7	13.4	8.4
Group residual rate,	9.4	9.9	9.3	9.2	9.7	8.7	8.8	9.3	8.8	8.5
CHESTER.										
General death rate,	16.1	15.8	16.0	15.8	16.8	15.4	16.7	18.4	17.1	16.1
Sanitary index,	7.0	5.5	6.4	6.2	6.2	5.6	6.2	7.2	6.2	5.4
Group sanitary index,	6.3	5.8	5.5	5.5	5.8	5.0	4.9	5.2	5.0	4.9
Residual rate,	9.1	10.3	9.6	9.6	10.6	9.8	10.5	11.2	10.9	10.7
Group residual rate,	10.1	11.1	10.5	10.1	11.5	10.7	11.1	10.6	11.0	11.1
COATESVILLE.										
General death rate,	[illegible]	[illegible]	[illegible]	[illegible]	13.3	10.8	11.4	11.1	9.8	9.4
Sanitary index,	[illegible]	[illegible]	[illegible]	[illegible]	6.0	4.6	6.5	5.5	4.5	4.7
Group sanitary index,	[illegible]	[illegible]	[illegible]	[illegible]	6.1	5.1	5.2	5.2	4.8	4.6
Residual rate,	[illegible]	[illegible]	[illegible]	[illegible]	7.3	6.2	7.9	5.6	5.3	4.7
Group residual rate,	[illegible]	[illegible]	[illegible]	[illegible]	9.7	8.7	8.8	9.3	8.8	8.5
COLUMBIA.										
General death rate,	13.2	13.7	13.2	13.0	15.8	12.7	11.9	12.4	14.5	14.3
Sanitary index,	6.4	4.4	3.8	3.7	5.9	4.1	3.4	3.2	5.6	3.5
Group sanitary index,	7.2	6.1	5.9	5.8	6.1	5.1	5.2	5.2	4.8	4.5
Residual rate,	6.8	9.3	9.4	9.3	9.9	8.6	8.5	8.7	8.9	10.8
Group residual rate,	9.4	9.9	9.3	9.2	9.7	8.7	8.8	9.3	8.8	8.5

TABULATION OF MUNICIPALITIES—Continued.

	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.
CONNELLSVILLE.										
General death rate,	----	----	----	----	15.8	14.2	12.0	12.7	12.7	11.9
Sanitary index,	----	----	----	----	5.3	4.1	3.7	3.7	3.6	3.9
Group sanitary index,	----	----	----	----	6.1	5.1	5.2	5.2	4.8	4.5
Residual rate,	----	----	----	----	10.5	10.1	8.3	9.0	9.1	8.0
Group residual rate,	----	----	----	----	9.7	8.7	8.8	9.3	8.8	8.5
DuBOIS.										
General death rate,	13.6	13.0	11.1	8.8	11.4	10.2	10.0	12.9	10.4	8.9
Sanitary index,	6.3	5.5	4.0	3.9	3.7	3.4	4.0	4.0	2.6	2.9
Group sanitary index,	7.2	6.1	5.9	5.8	6.1	5.1	5.2	5.2	4.8	4.5
Residual rate,	7.3	7.5	7.1	4.9	7.7	6.8	6.0	8.9	7.8	6.0
Group residual rate,	9.4	9.9	9.3	9.2	9.7	8.7	8.8	9.3	8.8	8.5
DUNMORE.										
General death rate,	16.5	13.5	15.3	17.1	16.9	17.5	18.3	16.8	16.9	17.5
Sanitary index,	8.4	5.3	7.0	8.1	8.2	8.8	8.1	7.9	7.9	8.0
Group sanitary index,	7.2	6.1	5.9	5.8	6.1	5.1	5.2	5.2	4.8	4.5
Residual rate,	8.1	8.2	8.3	9.0	8.7	8.7	10.2	8.9	9.0	9.5
Group residual rate,	9.4	9.9	9.3	9.2	9.7	8.7	8.8	9.3	8.8	8.5

DUQUESNE.										
General death rate,	20.3	16.7	14.0	16.3	12.4	10.9	11.3	13.6	11.5	10.0
Sanitary index,	12.9	10.0	8.0	9.4	7.6	5.4	5.6	8.2	6.1	5.0
Group sanitary index,	7.2	6.1	5.9	5.8	6.1	5.1	5.2	5.2	4.8	4.5
Residual rate,	7.4	6.7	6.0	6.9	4.8	5.5	5.7	5.4	5.4	5.0
Group residual rate,	9.4	9.9	9.3	9.2	9.7	8.7	8.8	9.3	8.8	8.5
EASTON.										
General death rate,	16.4	17.2	14.1	15.3	16.3	16.8	17.3	17.1	17.0	15.6
Sanitary index,	5.4	5.2	3.4	4.2	4.2	4.6	3.5	4.1	4.1	4.0
Group sanitary index,	6.3	5.8	5.5	5.5	5.8	5.0	4.9	5.2	5.0	4.9
Residual rate,	11.0	12.0	10.7	11.1	12.1	12.2	13.8	13.0	12.9	11.6
Group residual rate,	10.1	11.1	10.5	10.1	11.5	10.7	11.1	13.6	11.0	11.1
ERIE.										
General death rate,	14.2	15.6	15.6	15.5	14.8	16.2	15.0	16.0	14.6	15.0
Sanitary index,	5.1	5.4	5.0	5.9	4.8	6.3	5.0	5.3	4.6	3.4
Group sanitary index,	5.2	5.2	5.1	5.1	5.4	4.9	4.8	4.9	4.9	4.4
Residual rate,	9.1	10.2	10.6	9.6	10.0	9.9	10.0	10.7	10.9	11.6
Group residual rate,	9.3	10.2	9.5	9.4	9.9	9.8	9.7	10.4	9.7	10.2
GREENSBURG.										
General death rate,	----	----	----	----	19.8	15.7	14.7	17.5	15.7	13.8
Sanitary index,	----	----	----	----	6.7	3.7	3.9	5.1	4.3	3.1
Group sanitary index,	----	----	----	----	6.1	5.1	5.2	5.2	4.8	4.5
Residual rate,	----	----	----	----	13.1	12.0	10.8	12.4	11.4	10.7
Group residual rate,	----	----	----	----	9.7	8.7	8.8	9.3	8.8	8.5

TABULATION OF MUNICIPALITIES—Continued.

	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.
HARRISBURG.										
General death rate,	14.4	14.8	13.9	14.6	14.6	15.1	14.3	14.1	13.9	14.2
Sanitary index,	5.0	4.1	4.2	4.3	4.8	4.1	4.0	3.5	3.2	3.5
Group sanitary index,	5.2	5.2	5.1	5.1	5.4	4.9	4.8	4.9	4.9	4.4
Residual rate,	9.4	10.7	9.7	10.3	9.8	11.0	10.3	10.6	10.7	10.7
Group residual rate,	9.3	10.2	9.5	9.4	9.9	9.8	9.7	10.4	9.7	10.2
HAZLETON.										
General death rate,	13.2	11.7	10.6	14.6	16.9	13.0	15.1	15.5	15.4	18.6
Sanitary index,	5.4	3.9	2.9	5.6	5.6	3.8	4.7	4.7	5.1	6.0
Group sanitary index,	7.2	6.1	5.9	5.5	5.8	5.0	4.9	5.2	5.0	4.9
Residual rate,	7.8	7.8	7.7	9.0	11.3	9.2	10.4	10.8	10.3	12.6
Group residual rate,	9.4	9.9	9.3	10.1	11.5	10.7	11.1	13.6	11.0	11.1
HOMESTEAD.										
General death rate,	18.3	18.1	14.4	14.6	16.4	11.8	13.4	14.2	12.2	10.7
Sanitary index,	10.3	10.2	7.1	7.8	8.5	7.2	7.0	7.5	6.6	6.0
Group sanitary index,	7.2	6.1	5.9	5.8	6.1	5.1	5.2	5.2	4.8	4.5
Residual rate,	8.0	7.9	7.3	6.8	7.9	4.6	6.4	6.7	5.6	4.7
Group residual rate,	9.4	9.9	9.3	9.2	9.7	8.7	8.8	9.3	8.8	8.5

JOHNSTOWN.										
General death rate,	15.1	14.3	14.0	15.8	16.6	14.4	15.3	16.9	14.7	14.1
Sanitary index,	6.2	6.0	5.6	7.2	7.0	6.3	6.3	6.7	6.3	5.4
Group sanitary index,	6.3	5.2	5.1	5.1	5.4	4.9	4.8	4.9	4.9	4.4
Residual rate,	8.9	8.3	8.4	8.6	9.6	8.1	9.0	10.2	8.4	8.7
Group residual rate,	10.1	10.2	9.5	9.4	9.9	9.8	9.7	10.4	9.7	10.2
LANCASTER.										
General death rate,	15.4	13.4	15.1	13.8	15.2	14.5	14.3	13.7	14.1	16.1
Sanitary index,	5.8	3.6	4.4	4.1	3.8	3.7	3.7	3.7	3.7	3.9
Group sanitary index,	6.3	5.8	5.5	5.5	5.8	5.0	4.9	5.2	5.0	4.4
Residual rate,	9.6	9.8	10.7	9.7	11.4	10.8	10.6	10.0	10.4	12.2
Group residual rate,	10.1	11.1	10.5	10.1	11.5	10.7	11.1	13.6	11.0	10.2
LEBANON.										
General death rate,	16.4	14.7	14.4	16.6	16.9	15.8	14.9	16.9	16.0	16.1
Sanitary index,	5.2	4.2	3.9	4.7	5.2	4.8	3.4	5.7	3.9	3.9
Group sanitary index,	7.2	6.1	5.9	5.8	6.1	5.1	5.2	5.2	4.8	4.5
Residual rate,	11.2	10.5	10.5	11.9	11.7	11.0	11.5	11.2	12.1	12.2
Group residual rate,	9.4	9.9	9.3	9.2	9.7	8.7	8.8	9.3	8.8	8.5
McKEES ROCKS.										
General death rate,	----	----	----	----	16.5	10.5	11.5	16.9	10.1	10.3
Sanitary index,	----	----	----	----	9.4	5.5	6.3	9.3	6.1	4.7
Group sanitary index,	----	----	----	----	6.1	5.1	5.2	5.2	4.8	4.5
Residual rate,	----	----	----	----	7.1	5.0	5.2	7.6	4.0	5.6
Group residual rate,	----	----	----	----	9.7	8.7	8.8	9.3	8.8	8.5

TABULATION OF MUNICIPALITIES—Continued.

	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.
McKEESPORT.										
General death rate,	21.7	21.8	18.1	16.8	20.0	14.5	14.8	15.4	13.9	13.6
Sanitary index,	9.9	9.4	8.2	7.2	8.6	4.9	5.3	5.8	5.1	4.9
Group sanitary index,	6.3	5.8	5.5	5.5	5.8	5.0	4.9	5.2	5.0	4.9
Residual rate,	11.8	12.4	9.9	9.6	11.4	9.6	9.5	9.6	8.8	8.7
Group residual rate,	10.1	11.2	10.5	10.1	11.5	10.7	11.1	13.6	11.0	11.1
MAHANOY CITY.										
General death rate,	20.1	15.4	18.1	16.8	17.3	17.1	15.7	16.6	11.0	13.3
Sanitary index,	9.9	6.5	7.7	7.2	8.5	8.2	6.7	6.6	4.1	6.2
Group sanitary index,	7.2	6.1	5.9	5.8	6.1	5.1	5.2	5.2	4.8	4.5
Residual rate,	10.2	8.9	10.4	9.6	8.8	8.9	9.0	10.0	6.6	7.1
Group residual rate,	9.4	9.9	9.3	9.2	9.7	8.7	8.8	9.3	8.8	8.5
MEADVILLE.										
General death rate,	12.8	17.5	15.2	16.4	13.7	13.4	16.6	15.1	14.7	16.3
Sanitary index,	2.3	3.7	3.3	3.3	2.4	3.0	2.9	3.6	3.6	2.0
Group sanitary index,	7.2	6.1	5.9	5.8	6.1	5.1	5.2	5.2	4.8	4.5
Residual rate,	10.5	13.8	11.9	13.1	11.3	10.4	13.7	11.8	11.1	14.3
Group residual rate,	9.4	9.9	9.3	9.2	9.7	8.7	8.8	9.3	8.8	8.5

MONESSEN.										
General death rate,	----	----	----	----	12.8	10.7	10.0	10.8	9.8	8.6
Sanitary index,	----	----	----	----	7.8	6.2	5.6	6.0	5.5	5.7
Group sanitary index,	----	----	----	----	6.1	5.1	5.2	5.2	4.8	4.5
Residual rate,	----	----	----	----	5.0	4.5	4.4	4.8	4.3	2.9
Group residual rate,	----	----	----	----	9.7	8.7	8.8	9.3	8.8	8.5
MOUNT CARMEL.										
General death rate,	13.1	15.4	13.8	14.0	13.2	10.6	12.3	11.1	10.9	9.9
Sanitary index,	6.6	8.3	6.8	7.0	6.1	4.4	5.8	4.8	5.1	4.7
Group sanitary index,	7.2	6.1	5.9	5.8	6.1	5.1	5.2	5.2	4.8	4.5
Residual rate,	6.5	7.1	7.0	7.0	7.1	6.2	6.5	6.3	5.8	5.2
Group residual rate,	9.4	9.9	9.3	9.2	9.7	8.7	8.8	9.3	8.8	8.5
NANTICOKE.										
General death rate,	15.4	13.3	16.3	15.1	17.2	14.5	15.0	14.5	14.8	12.7
Sanitary index,	8.9	5.6	8.5	7.3	8.3	5.9	6.6	5.5	5.7	4.8
Group sanitary index,	7.2	6.1	5.9	5.8	6.1	5.1	5.2	5.2	4.8	4.5
Residual rate,	6.5	7.7	7.8	7.8	8.9	8.6	8.4	9.0	9.1	7.9
Group residual rate,	9.4	9.9	9.3	9.2	9.7	8.7	8.8	9.3	8.8	8.5
NEW CASTLE.										
General death rate,	15.5	16.6	14.1	14.3	15.9	14.4	14.4	13.5	11.7	12.7
Sanitary index,	6.1	5.7	4.8	5.5	4.9	5.5	5.1	5.2	4.0	3.9
Group sanitary index,	6.3	5.8	5.5	5.5	5.8	5.0	4.9	5.2	5.0	4.9
Residual rate,	9.4	10.9	9.3	8.8	11.0	8.9	9.3	8.3	7.7	8.8
Group residual rate,	10.1	11.1	10.5	10.1	11.5	10.7	11.1	13.6	11.0	11.1

TABULATION OF MUNICIPALITIES—Continued.

	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.
NORRISTOWN.										
General death rate,	23.7	23.9	22.0	21.8	24.4	21.8	21.8	22.3	21.2	21.7
Sanitary index,	7.3	5.9	5.1	5.4	5.5	4.8	5.8	5.1	4.6	5.3
Group sanitary index,	6.3	5.8	5.5	5.5	5.8	5.0	4.9	5.2	5.0	4.9
Residual rate,	16.4	18.0	16.9	16.4	18.9	17.0	16.0	17.2	16.3	16.4
Group residual rate,	10.1	11.1	10.5	10.1	11.5	10.7	11.1	13.6	11.0	11.1
NORTH BRADDOCK.										
General death rate,	----	----	----	----	13.4	11.4	10.6	11.9	9.6	11.1
Sanitary index,	----	----	----	----	6.5	5.9	4.7	5.2	4.7	5.4
Group sanitary index,	----	----	----	----	6.1	5.1	5.2	5.2	4.8	4.5
Residual rate,	----	----	----	----	6.9	5.5	5.9	6.7	4.9	5.7
Group residual rate,	----	----	----	----	9.7	8.7	8.8	9.3	8.8	8.5
OIL CITY.										
General death rate,	11.9	11.5	12.7	12.9	12.5	12.1	12.2	13.8	13.3	11.4
Sanitary index,	4.0	3.3	2.9	4.4	3.8	3.4	3.5	3.7	3.3	2.4
Group sanitary index,	7.2	6.1	5.9	5.8	6.1	5.1	5.2	5.2	4.8	4.5
Residual rate,	7.9	8.2	9.8	8.5	8.7	8.7	8.7	10.1	10.0	9.0
Group residual rate,	9.4	9.9	9.3	9.2	9.7	8.7	8.8	9.3	8.8	8.5

OLD FORGE.										
General death rate,					17.4	13.9	16.0	13.6	14.5	10.5
Sanitary index,					9.1	6.9	9.0	6.0	6.5	5.1
Group sanitary index,					6.1	5.1	5.2	5.2	4.8	4.5
Residual rate,					8.5	7.0	7.0	7.6	8.0	5.4
Group residual rate,					9.7	8.7	8.8	9.3	8.8	8.5
PHILADELPHIA.										
General death rate,	19.1	18.6	17.3	16.1	17.1	16.6	15.3	15.7	16.1	15.7
Sanitary index,	7.9	7.0	6.5	5.9	6.1	5.6	4.7	5.0	5.0	4.5
Group sanitary index,	8.0	7.8	6.5	5.7	6.1	5.1	4.9	5.2	5.0	4.6
Residual rate,	11.2	11.6	10.8	10.5	11.3	11.0	10.6	10.7	11.1	11.2
Group residual rate,	11.2	11.0	10.7	10.5	11.4	10.7	10.5	10.8	10.9	10.8
PHOENIXVILLE.										
General death rate,	18.8	19.0	17.3	15.1	19.1	17.6	17.0	16.0	16.1	16.6
Sanitary index,	9.0	6.1	8.0	5.2	7.1	6.5	6.1	5.7	6.1	5.1
Group sanitary index,	7.2	6.1	5.9	5.8	6.1	5.1	5.2	5.2	4.8	4.5
Residual rate,	9.8	12.9	9.3	10.2	12.0	11.1	10.9	10.3	10.0	11.5
Group residual rate,	9.4	9.5	9.3	9.2	9.7	8.7	8.8	9.3	8.8	8.5
PITTSBURGH.										
General death rate,	19.9	19.3	17.3	15.8	17.9	14.9	15.9	17.1	15.7	15.0
Sanitary index,	8.6	7.7	6.5	5.1	6.2	5.1	5.1	5.1	5.3	4.8
Group sanitary index,	8.0	7.8	6.5	5.7	6.1	5.1	4.9	5.2	5.0	4.6
Residual rate,	11.3	11.6	10.8	10.4	11.7	9.8	10.8	12.0	10.4	10.2
Group residual rate,	11.2	11.0	10.7	10.5	11.4	10.7	10.5	10.8	10.9	10.8

TABULATION OF MUNICIPALITIES—Continued.

	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.
PITTSTON.										
General death rate,	19.3	17.5	20.3	20.2	17.1	16.7	18.2	16.4	19.4	16.3
Sanitary index,	7.8	6.6	8.3	9.2	6.2	4.7	6.5	5.2	6.1	4.4
Group sanitary index,	7.2	6.1	5.9	5.8	6.1	5.1	5.2	5.2	4.8	4.5
Residual rate,	11.5	11.5	12.0	11.0	10.9	12.0	11.7	11.2	13.3	11.9
Group residual rate,	9.4	9.9	9.3	9.2	9.7	8.7	8.8	9.3	8.8	8.5
PLYMOUTH.										
General death rate,	15.9	15.5	15.9	14.1	15.1	14.5	12.8	10.6	11.3	9.3
Sanitary index,	7.3	6.6	8.2	6.4	6.4	6.6	5.1	3.8	5.5	3.7
Group sanitary index,	7.2	6.1	5.9	5.8	6.1	5.1	5.2	5.2	4.8	4.5
Residual rate,	8.6	8.9	7.7	7.7	8.7	7.9	7.7	6.8	5.8	5.6
Group residual rate,	9.4	9.9	9.3	9.2	9.7	8.7	8.8	9.3	8.8	8.5
POTTSTOWN.										
General death rate,	15.3	16.5	13.8	13.5	15.0	13.3	12.5	13.4	13.7	13.9
Sanitary index,	4.8	5.2	3.8	3.8	4.8	4.2	3.6	4.0	3.7	3.4
Group sanitary index,	7.2	6.1	5.9	5.8	6.1	5.1	5.2	5.2	4.8	4.5
Residual rate,	10.5	11.3	10.0	9.7	10.2	9.1	8.9	9.4	10.0	10.5
Group residual rate,	9.4	9.9	9.3	9.2	9.7	8.7	8.8	9.3	8.8	8.5

POTTSVILLE.										
General death rate,	17.1	19.2	18.6	17.6	18.7	18.6	19.7	19.3	16.7	18.3
Sanitary index,	4.3	5.0	5.2	4.3	5.5	5.8	5.0	4.7	4.6	4.6
Group sanitary index,	7.2	6.1	5.9	5.8	6.1	5.1	5.2	5.2	4.8	4.5
Residual rate,	12.8	14.2	13.4	13.3	13.2	12.8	14.7	14.6	12.1	13.7
Group residual rate,	9.4	9.9	9.3	9.2	9.7	8.7	8.8	9.3	8.8	8.5
READING.										
General death rate,	14.8	15.6	14.7	13.8	15.3	14.3	13.8	15.1	14.1	13.8
Sanitary index,	5.5	5.3	5.2	4.2	5.2	4.7	4.1	5.2	4.4	3.9
Group sanitary index,	5.2	5.2	5.1	5.1	5.4	4.9	4.8	5.2	5.0	4.6
Residual rate,	9.3	10.3	9.5	9.6	10.1	9.6	9.7	9.9	9.7	9.9
Group residual rate,	9.3	10.2	9.5	9.4	9.9	9.8	9.7	10.8	10.9	10.8
SCRANTON.										
General death rate,	16.4	15.7	16.4	16.3	16.4	14.8	14.6	14.8	15.8	14.6
Sanitary index,	5.9	6.0	6.3	6.0	5.4	4.0	5.0	4.4	5.1	4.5
Group sanitary index,	8.0	7.8	6.5	5.7	6.1	5.4	4.9	5.2	5.0	4.6
Residual rate,	10.5	9.7	10.1	10.3	11.0	10.8	9.6	10.4	10.7	10.1
Group residual rate,	11.2	11.0	10.7	10.5	11.4	10.7	10.5	10.8	10.9	10.8
SHAMOKIN.										
General death rate,	15.2	13.0	13.6	12.8	13.7	12.5	13.3	12.5	11.5	11.2
Sanitary index,	6.0	5.3	5.0	5.9	5.1	4.5	4.8	4.2	4.3	4.8
Group sanitary index,	7.2	6.1	5.9	5.8	6.1	5.1	5.2	5.2	4.8	4.5
Residual rate,	9.2	7.7	8.6	6.9	8.6	8.0	8.5	8.3	7.2	6.4
Group residual rate,	9.4	9.9	9.3	9.2	9.7	8.7	8.8	9.3	8.8	8.5

TABULATION OF MUNICIPALITIES—Continued.

	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.
SHARON.										
General death rate,	16.3	21.4	14.6	13.9	16.5	12.0	11.4	14.2	11.8	13.6
Sanitary index,	6.7	8.6	6.5	5.8	6.9	4.0	4.1	6.0	4.0	4.5
Group sanitary index,	7.2	6.1	5.9	5.8	6.1	5.1	5.2	5.2	4.8	4.5
Residual rate,	9.6	12.8	8.7	8.1	9.6	8.0	7.3	8.2	7.8	9.1
Group residual rate,	9.4	9.9	9.3	9.2	9.7	8.7	8.8	9.3	8.8	8.5
SHENANDOAH.										
General death rate,	23.6	19.1	19.3	18.0	17.0	19.1	20.2	18.9	16.4	13.7
Sanitary index,	14.0	8.9	10.0	9.7	10.0	10.5	11.1	10.4	8.1	7.2
Group sanitary index,	7.2	6.1	5.9	5.5	5.8	5.0	4.9	5.2	5.0	4.9
Residual rate,	9.6	10.2	9.3	8.3	7.0	8.6	9.1	8.5	8.3	6.5
Group residual rate,	9.4	9.9	9.3	10.1	11.5	10.7	11.1	13.6	11.0	11.1
SOUTH BETHLEHEM.										
General death rate,	16.5	16.2	13.9	16.2	16.6	14.8	15.2	14.8	12.5	12.7
Sanitary index,	8.3	8.1	7.6	8.8	8.0	8.3	8.1	8.4	6.3	7.0
Group sanitary index,	7.2	6.1	5.9	5.8	6.1	5.1	5.2	5.2	4.8	4.5
Residual rate,	8.2	8.1	6.3	7.4	8.6	6.5	7.1	6.4	6.2	5.7
Group residual rate,	9.4	9.9	9.3	9.2	9.7	8.7	8.8	9.3	8.8	8.5

STEELTON.										
General death rate,	18.7	19.3	13.9	13.0	15.2	13.0	13.3	12.5	11.2	10.1
Sanitary index,	10.0	10.0	7.0	6.7	8.1	7.8	5.7	6.2	5.1	3.7
Group sanitary index,	7.2	6.1	5.9	5.8	6.1	5.1	5.2	5.2	4.8	4.5
Residual rate,	8.7	9.3	6.9	6.3	7.1	5.2	7.6	6.3	6.1	6.4
Group residual rate,	9.4	9.9	9.3	9.2	9.7	8.7	8.8	9.3	8.8	8.5
SUNBURY.										
General death rate,	13.6	12.1	11.9	11.9	13.6	12.7	10.8	11.7	10.7	11.5
Sanitary index,	4.6	3.4	3.3	3.6	4.5	3.9	3.8	2.6	2.8	2.6
Group sanitary index,	7.2	6.1	5.9	5.8	6.1	5.1	5.2	5.2	4.8	4.5
Residual rate,	9.0	8.7	8.6	8.3	9.1	8.8	7.0	9.1	7.9	8.9
Group residual rate,	9.4	9.9	9.3	9.2	9.7	8.7	8.8	9.3	8.8	8.5
UNIONTOWN.										
General death rate,	----	----	----	----	18.3	13.1	15.6	15.3	14.4	13.2
Sanitary index,	----	----	----	----	5.5	4.6	5.1	4.1	3.6	3.4
Group sanitary index,	----	----	----	----	6.1	5.1	5.2	5.2	4.8	4.5
Residual rate,	----	----	----	----	12.8	8.5	10.5	11.2	10.8	9.8
Group residual rate,	----	----	----	----	9.7	8.7	8.8	9.3	8.8	8.5
WARREN.										
General death rate,	12.2	10.6	11.2	13.1	13.4	8.9	12.5	11.6	11.5	10.8
Sanitary index,	3.5	2.0	2.3	2.9	4.9	2.0	2.6	2.8	2.6	1.9
Group sanitary index,	7.2	6.1	5.9	5.8	6.1	5.1	5.2	5.2	4.8	4.5
Residual rate,	8.7	8.6	8.9	10.2	8.5	6.9	9.9	8.8	8.9	8.9
Group residual rate,	9.4	9.9	9.3	9.2	9.7	8.7	8.8	9.3	8.8	8.5

TABULATION OF MUNICIPALITIES—Continued.

	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.
WASHINGTON.										
General death rate,	----	----	----	----	15.9	13.6	13.3	15.4	14.6	13.9
Sanitary index,	----	----	----	----	4.5	4.2	4.2	4.2	4.8	4.8
Group sanitary index,	----	----	----	----	6.1	5.1	5.2	5.2	4.8	4.5
Residual rate,	----	----	----	----	11.4	9.4	9.1	11.2	9.8	9.1
Group residual rate,	----	----	----	----	9.7	8.7	8.8	9.3	8.8	8.5
WEST CHESTER.										
General death rate,	20.1	22.3	20.8	17.1	19.6	19.7	19.8	17.1	22.2	20.9
Sanitary index,	5.4	7.1	5.5	4.7	3.6	4.7	5.5	4.9	5.5	5.1
Group sanitary index,	7.2	6.1	5.9	5.8	6.1	5.1	5.2	5.2	4.8	4.5
Residual rate,	14.7	15.2	15.3	12.4	16.0	15.0	14.3	12.2	16.7	15.8
Group residual rate,	9.4	9.9	9.3	9.2	9.7	8.7	8.8	9.3	8.8	8.5
WILKES-BARRE.										
General death rate,	14.7	16.7	15.5	15.5	16.6	15.5	15.0	15.1	15.4	16.2
Sanitary index,	4.9	5.4	5.2	4.9	5.4	4.3	4.7	3.9	4.8	4.8
Group sanitary index,	5.2	5.2	5.1	5.1	5.4	4.9	4.8	4.9	4.9	4.4
Residual rate,	9.8	11.3	10.3	10.6	11.2	11.2	10.3	11.2	10.6	11.4
Group residual rate,	9.3	10.2	9.5	9.4	9.9	9.8	9.7	10.4	9.7	10.2

WILKINSBURG.										
General death rate,	15.1	13.7	13.6	13.7	14.9	12.8	13.7	16.3	13.7	12.7
Sanitary index,	6.3	3.6	4.1	3.0	3.8	3.1	2.7	3.7	3.3	3.1
Group sanitary index,	7.2	6.1	5.9	5.8	6.1	5.1	5.2	5.2	4.8	4.5
Residual rate,	8.8	10.1	9.5	10.7	11.1	9.7	11.0	12.6	10.4	9.6
Group residual rate,	9.4	9.9	9.3	9.2	9.7	8.7	8.8	9.3	8.8	8.5
WILLIAMSPORT.										
General death rate,	15.9	18.3	16.3	15.8	15.3	16.1	17.7	16.2	16.3	16.5
Sanitary index,	4.2	5.3	4.0	4.6	4.1	3.9	3.4	3.2	3.9	3.9
Group sanitary index,	6.3	5.8	5.5	5.5	5.8	5.0	4.9	5.2	5.0	4.9
Residual rate,	11.7	13.0	12.3	11.2	11.2	12.2	14.3	13.0	12.4	12.6
Group residual rate,	10.1	11.1	10.5	10.1	11.5	10.7	11.1	13.6	11.0	11.1
YORK.										
General death rate,	14.4	15.5	13.8	13.1	16.5	14.3	13.0	14.6	13.7	12.4
Sanitary index,	5.3	5.4	5.1	4.3	6.0	4.6	3.1	4.1	4.1	3.7
Group sanitary index,	6.3	5.8	5.5	5.5	5.8	5.0	4.9	5.2	5.0	4.4
Residual rate,	9.1	10.1	8.7	8.8	10.5	9.7	9.9	10.5	9.6	8.7
Group residual rate,	10.1	11.1	10.5	10.1	11.5	10.7	11.1	13.6	11.0	10.2

*The blank years in this table indicate the period when the population was under 10,000.

N. B. Farrell is not included in this comparison because we have no complete data for an estimate of the change in its population. It was made from South Sharon and certain parts of the adjoining township in 1912, but as South Sharon itself did not become a borough until 1901, the census data are insufficient.

TYPHOID FEVER.

The decline in the death rates from typhoid fever which is shown for each year of the period 1906 to 1915, inclusive, amounts to 77.5%. Perhaps no single disease reflects so truly the result of well-directed sanitary effort, and a very decided advance in the security from illness existing in influences beyond personal control as well as from safer and more intelligent habits of life.

DEATH RATES FROM TYPHOID FEVER PER 100,000 OF POPULATION.

1906	1907	1908	1909	1910	1911	1912	1913	1914	1915
54.8	48.6	33.0	22.7	24.6	21.9	16.4	18.1	13.0	12.3

DEATHS FROM TYPHOID FEVER BY MONTHS FOR THE YEARS 1906 TO 1915, INCLUSIVE.

	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915
Total,	3,917	3,538	2,450	1,712	1,892	1,716	1,310	1,470	1,071	1,034
January,	365	475	289	115	130	143	131	92	70	76
February,	327	374	254	134	124	176	110	84	70	59
March,	312	286	214	132	138	125	99	65	77	55
April,	394	240	188	111	125	101	81	81	66	60
May,	342	237	129	114	91	92	62	105	81	49
June,	204	176	101	80	78	89	65	97	55	62
July,	221	186	129	102	80	88	92	111	65	50
August,	306	268	231	179	208	174	126	173	107	83
September,	347	378	295	201	275	199	148	201	134	134
October,	368	350	238	219	284	223	171	196	129	160
November,	349	290	188	167	208	168	119	137	123	116
December,	391	278	194	158	151	138	106	128	94	130

DEATHS FROM TYPHOID FEVER BY SEX AND AGE PERIODS FOR THE YEARS 1906 TO 1915, INCLUSIVE.

	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915
Total at all ages,	3,917	3,538	2,450	1,712	1,892	1,716	1,310	1,470	1,071	1,034
Males,	2,393	2,152	1,449	1,023	1,152	1,043	812	905	659	633
Females,	1,524	1,386	1,001	689	740	673	498	565	412	401
Under 1 year,	16	17	8	8	3	4	8	4	5	6
1 to 2 years,	38	19	28	21	10	14	10	8	5	4
2 to 3 years,	38	30	31	18	22	9	12	16	4	9
3 to 4 years,	44	42	37	24	13	15	13	19	19	5
4 to 5 years,	43	34	30	16	29	24	8	14	6	9
Total under 5 years,	179	142	134	87	77	66	51	61	39	33
5 to 9 years,	234	155	148	103	111	92	77	93	62	48
10 to 19 years,	810	736	506	332	376	315	254	307	217	189
20 to 29 years,	1,317	1,187	734	514	577	526	438	456	327	303
30 to 39 years,	671	646	425	293	324	331	215	256	191	220
40 to 49 years,	347	341	230	184	191	189	131	146	107	107
50 to 59 years,	210	193	164	119	146	113	73	97	63	71
60 to 69 years,	93	91	76	54	54	56	42	35	47	42
70 to 79 years,	42	43	26	21	27	25	27	17	16	16
80 years and over,	7	3	7	5	9	3	2	2	2	5
Unknown age,	7	1								

DIPHTHERIA.

The decline in the death rates from diphtheria reflects the wisdom and increased appreciation of the free distribution of antitoxin. The age distribution illustrates the greater fatality attached to the early years of life when early diagnosis and treatment are essential if continued declines are to be looked for in the death rates from this disease.

DEATH RATES FROM DIPHTHERIA PER 100,000 OF POPULATION.

1906	1907	1908	1909	1910	1911	1912	1913	1914	1915
34.1	29.4	26.6	26.5	29.0	27.0	25.6	25.9	23.3	19.5

DEATHS FROM DIPHTHERIA BY MONTHS FOR THE YEARS 1906 TO 1915, INCLUSIVE.

	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915
Total,	2,438	2,138	1,970	2,002	2,255	2,111	2,042	2,099	1,925	1,632
January,	236	259	221	199	209	203	288	228	227	180
February,	213	165	207	178	189	188	183	196	168	137
March,	205	145	173	212	182	199	154	170	188	134
April,	159	139	133	138	160	150	127	180	145	123
May,	157	125	92	131	168	115	117	144	85	121
June,	85	99	95	96	126	98	91	119	95	91
July,	89	92	84	120	107	107	74	94	76	74
August,	116	118	108	108	142	81	116	118	99	71
September,	210	167	154	131	160	156	150	185	161	109
October,	318	267	225	209	245	272	236	207	190	180
November,	308	276	232	219	271	284	241	230	235	200
December,	312	296	246	251	276	258	265	228	226	212

DEATHS FROM DIPHTHERIA BY SEX AND AGE PERIODS FOR THE YEARS 1906 TO 1915, INCLUSIVE.

	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915
Total at all ages,	2,438	2,138	1,970	2,002	2,235	2,111	2,042	2,099	1,925	1,634
Males,	1,214	1,115	999	1,070	1,136	1,116	1,040	1,118	970	821
Females,	1,224	1,023	971	932	1,099	995	1,002	981	955	813
Under 1 year,	173	170	168	139	178	122	146	139	128	122
1 to 2 years,	373	351	322	367	379	325	337	355	338	264
2 to 3 years,	363	337	306	334	361	360	338	338	289	270
3 to 4 years,	319	267	264	283	299	301	316	276	270	211
4 to 5 years,	303	248	214	227	326	238	234	247	193	173
Total under 5 years,	1,531	1,373	1,274	1,350	1,543	1,346	1,371	1,355	1,218	1,050
5 to 9 years,	618	529	500	477	556	558	497	538	474	399
10 to 19 years,	188	167	131	114	158	142	116	138	151	118
20 to 29 years,	33	33	30	25	41	32	19	21	27	25
30 to 39 years,	22	14	16	13	11	17	17	21	33	18
40 to 49 years,	7	6	7	8	7	7	10	11	12	12
50 to 59 years,	2	7	8	7	11	7	7	5	6	6
60 to 69 years,	4	5	2	4	3	------	3	9	2	4
70 years and over,	3	4	2	4	5	3	2	1	2	------

SCARLET FEVER.

The death rates from scarlet fever, while the lowest for any of the ten years, present some rather erratic variations which illustrate the uncertainty of its absolute control by ordinary methods of prevention. The mildness of type and the absence of well-defined symptoms which escape the observation of parents and attendants frequently establish foci of infection beyond the control possibilities of public health effort, with resultant epidemics.

DEATH RATES FROM DIPHTHERIA PER 100,000 OF POPULATION.

1906	1907	1908	1909	1910	1911	1912	1913	1914	1915
8.1	9.0	16.4	16.1	14.2	9.6	7.0	11.4	10.4	3.6

DEATHS FROM SCARLET FEVER BY MONTHS FOR THE YEARS 1906 TO 1915, INCLUSIVE.

	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915
Total,	577	657	1,217	1,216	1,094	749	552	915	860	301
January,	51	65	109	151	127	117	39	60	91	37
February,	62	63	108	124	112	93	55	87	103	43
March,	59	57	136	139	109	93	52	99	132	31
April,	67	40	135	121	103	93	53	73	93	41
May,	72	39	99	96	115	78	54	95	84	36
June,	32	42	65	73	98	65	45	79	87	22
July,	38	29	58	59	64	41	31	63	53	17
August,	28	41	55	63	71	27	36	42	41	9
September,	34	52	85	69	58	26	20	42	24	11
October,	33	63	114	74	68	31	42	70	54	16
November,	53	77	127	88	87	34	55	93	46	15
December,	48	89	126	159	82	50	70	112	52	23

DEATHS FROM SCARLET FEVER BY SEX AND AGE PERIODS FOR THE YEARS 1906 TO 1915, INCLUSIVE.

	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915
Total at all ages,	577	657	1,217	1,216	1,094	749	552	915	860	301
Males,	270	326	621	632	501	384	288	437	429	141
Females,	307	331	596	584	593	365	264	478	431	160
Under 1 year,	43	26	62	72	64	46	34	56	34	24
1 to 2 years,	69	100	154	164	126	103	59	97	104	41
2 to 3 years,	90	100	191	214	180	113	78	122	111	31
3 to 4 years,	92	89	170	171	150	113	89	103	102	34
4 to 5 years,	62	79	130	133	137	85	77	109	77	19
Total under 5 years,	356	394	707	754	657	460	337	487	428	149
5 to 9 years,	171	192	349	314	308	169	152	282	262	96
10 to 19 years,	34	49	109	106	91	71	42	97	108	35
20 to 29 years,	10	15	39	28	27	33	14	29	43	14
30 years and over,	5	7	13	14	11	16	7	20	19	7
Unknown age,	1									

MEASLES.

The death rate from measles corresponded exactly with the rate for the previous year (1914). These rates are the lowest for the ten-year period, but the well-illustrated tendency of this disease to become epidemic upon an extensive scale at irregular intervals of from three to four years makes any prediction as to its continued decline extremely uncertain.

DEATH RATES FROM MEASLES PER 100,000 OF POPULATION.

1906	1907	1908	1909	1910	1911	1912	1913	1914	1915
20.5	9.8	16.4	14.0	16.1	10.3	10.6	19.5	6.7	6.7

DEATHS FROM MEASLES BY MONTHS FOR THE YEARS 1906 TO 1915, INCLUSIVE.

	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915
Total,	1,463	714	1,215	1,060	1,237	804	846	1,578	549	565
January,	99	40	187	80	122	92	72	210	46	81
February,	136	39	163	81	154	105	69	238	62	42
March,	164	70	176	145	152	141	94	311	68	46
April,	186	90	180	163	174	170	99	262	106	54
May,	173	99	181	171	170	132	80	195	62	66
June,	155	100	107	86	137	49	88	98	51	46
July,	122	73	67	73	91	31	66	74	35	51
August,	98	46	30	54	53	11	34	58	13	15
September,	93	16	15	27	35	15	25	22	7	16
October,	88	18	25	38	27	10	32	24	17	17
November,	86	42	30	48	41	19	66	38	34	28
December,	63	81	54	94	81	29	124	48	48	103

DEATHS FROM MEASLES BY SEX AND AGE PERIODS FOR THE YEARS 1906 TO 1915, INCLUSIVE.

	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915
Total at all ages,	1,463	714	1,215	1,060	1,237	804	846	1,578	549	565
Males,	785	380	640	576	664	411	447	885	265	314
Females,	678	334	575	484	573	393	398	693	284	251
Under 1 year,	306	206	291	286	306	202	202	391	138	178
1 to 2 years,	478	231	411	358	404	273	308	562	210	193
2 to 3 years,	210	112	179	166	201	117	131	256	75	76
3 to 4 years,	116	48	103	78	105	71	52	105	30	49
4 to 5 years,	70	31	64	46	67	41	42	58	20	23
Total under 5 years,	1,240	628	1,048	934	1,083	704	735	1,372	473	519
5 to 9 years,	129	51	116	77	98	54	68	111	39	33
10 to 19 years,	47	13	27	23	30	25	24	49	19	3
20 to 29 years,	21	10	5	12	10	10	5	19	7	3
30 to 39 years,	11	5	13	4	10	6	8	11	4	2
40 to 49 years,	7	6	4	5	3	4	2	6	1	1
50 years and over,	5	1	2	5	3	1	3	10	6	1
Unknown age,	3									

WHOOPING COUGH.

The fatal incidence of whooping cough shows a rather continuous decline for the ten-year period 1906 to 1915, inclusive, which amounts to 69%. As more than 80% of all deaths occur in the first two years of life, it is quite possible that the general work on infant mortality is being reflected in the declining mortality rates for this disease.

DEATH RATES FROM WHOOPING COUGH PER 100,000 OF POPULATION.

1906	1907	1908	1909	1910	1911	1912	1913	1914	1915
21.7	17.7	17.0	12.0	14.5	12.7	10.2	11.7	11.4	6.7

DEATHS FROM WHOOPING COUGH BY MONTHS FOR THE YEARS 1906 TO 1915, INCLUSIVE.

	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915
Total,	1,550	1,287	1,264	910	1,114	998	809	898	939	573
January,	83	73	85	74	64	87	62	51	94	36
February,	96	91	110	90	79	106	93	62	109	54
March,	98	98	105	92	102	117	73	84	123	53
April,	123	118	143	91	106	117	94	77	120	54
May,	131	111	123	88	90	120	81	86	128	64
June,	178	112	112	90	75	75	69	93	83	37
July,	185	154	153	105	117	89	70	93	75	51
August,	176	173	158	84	140	78	74	96	64	39
September,	142	145	88	58	105	64	47	72	35	28
October,	121	85	59	56	83	47	50	53	31	29
November,	118	63	63	45	78	43	41	54	44	48
December,	99	64	65	37	75	64	55	77	33	60

DEATHS FROM WHOOPING COUGH BY SEX AND AGE PERIODS FOR THE YEARS 1906 TO 1915, INCLUSIVE.

	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915
Total at all ages,	1,550	1,287	1,264	910	1,114	998	809	898	939	573
Males,	679	612	532	417	483	468	366	418	429	269
Females,	871	675	732	493	631	530	443	480	510	304
Under 1 year,	881	731	679	509	581	567	476	503	509	322
1 to 2 years,	351	328	312	245	285	259	195	201	239	100
2 to 3 years,	135	114	122	78	129	75	59	89	88	45
3 to 4 years,	83	52	77	22	59	42	35	44	40	14
4 to 5 years,	41	25	32	25	34	17	12	20	20	11
Total under 5 years,	1,491	1,260	1,222	870	1,068	960	777	857	896	552
5 to 9 years,	51	20	37	32	41	34	24	35	32	18
10 years and over,	6	7	5	8	5	4	8	6	11	3
Unknown age,	2									

TUBERCULOSIS.

The death rates from tuberculosis in all forms show a slight increase from the low point of 1913. There is no doubt that the continuous dispensary work throughout the State, which becomes more firmly established year by year, brings under medical observation an increasing proportion of our tuberculous population and a keener recognition of this disease as a factor in death certification. Increased sanatorium facilities is also keeping within our State many cases of the advanced type of the disease whose fatal terminations were formerly recorded at distant points beyond our borders. The distribution of deaths in relation to the type of affection shows that tuberculosis of the lungs continues to occupy the same relative position.

DEATH RATES FROM TUBERCULOSIS PER 100,000 OF POPULATION.

1906	1907	1908	1909	1910	1911	1912	1913	1914	1915
150.9	148.7	137.8	133.9	133.7	135.2	123.9	120.9	123.8	126.9

TUBERCULOSIS OF THE LUNGS.

Death rates from tuberculosis of the lungs exclusive of miliary tuberculosis for the ten-year period 1906 to 1915, inclusive, per 100,000 of population.

1906	1907	1908	1909	1910	1911	1912	1913	1914	1915
129.6	127.9	117.3	115.1	114.0	122.8	103.5	100.0	102.4	105.6

DEATHS FROM TUBERCULOSIS OF THE LUNGS BY MONTHS FOR THE YEARS 1906 TO 1915, INCLUSIVE.

	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915
Total,	9,258	9,317	8,703	8,699	8,595	8,832	8,251	8,107	8,444	8,851
January,	739	804	819	767	771	785	801	753	758	758
February,	766	805	829	750	794	798	805	757	731	791
March,	980	976	919	936	1,010	870	852	801	868	861
April,	876	965	786	848	838	896	812	771	830	897
May,	836	829	795	838	732	785	743	744	833	867
June,	704	727	692	688	616	761	650	632	634	679
July,	708	717	655	667	685	685	628	601	623	722
August,	740	698	624	592	637	698	603	608	637	652
September,	645	594	626	572	616	597	591	559	649	602
October,	766	702	586	654	655	579	582	572	565	625
November,	673	679	683	691	656	654	577	602	605	663
December,	825	821	689	716	705	754	604	677	651	729

DEATHS FROM TUBERCULOSIS OF THE LUNGS BY SEX AND AGE PERIODS FOR THE YEARS 1906 TO 1915, INCLUSIVE.

	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915
Total at all ages,	9,258	9,317	8,703	8,699	8,595	8,832	8,251	8,107	8,444	8,851
Males,	4,786	4,896	4,691	4,721	4,574	4,814	4,578	4,513	4,888	5,059
Females,	4,472	4,421	4,012	3,978	4,021	4,018	3,673	3,594	3,556	3,792
Under 1 year,	212	239	167	134	138	139	112	97	134	104
1 to 2 years,	103	96	92	95	87	59	55	65	59	65
2 to 3 years,	56	51	54	41	47	37	29	26	23	28
3 to 4 years,	29	36	31	36	18	32	19	26	25	21
4 to 5 years,	27	23	25	24	20	16	21	16	14	14
Total under 5 years,	427	445	369	330	310	283	236	230	246	232
5 to 9 years,	89	92	88	83	69	78	72	68	54	56
10 to 19 years,	950	853	758	785	761	736	691	632	650	755
20 to 29 years,	2,456	2,382	2,323	2,396	2,364	2,313	2,179	2,086	2,195	2,217
30 to 39 years,	2,164	2,126	2,020	2,016	2,103	2,092	1,921	1,920	1,965	2,073
40 to 49 years,	1,349	1,443	1,398	1,321	1,417	1,404	1,404	1,311	1,454	1,547
50 to 59 years,	877	924	861	844	914	922	868	918	953	987
60 to 69 years,	562	644	547	592	567	651	545	586	593	626
70 to 79 years,	312	346	280	263	286	292	276	272	271	305
80 years and over,	47	55	58	68	50	61	59	53	50	53
Unknown age,	25	7	1	1	------	------	------	1	2	------

CANCER.

The death rates from cancer show a continuity of increase that bears out, so far as Pennsylvania is concerned, the well-established belief that this disease is steadily increasing throughout the civilized world to such an extent as to become a distinct menace to life in what should be one of its most productive periods. The extent of this menace may be appreciated from the fact that more than 80,000 deaths per annum occur in continental United States from this cause. The unusual efforts now being put forth by the organized medical profession to insure an early diagnosis which will permit of successful surgical interference as well as the constant laboratory research work which may develop preventive as well as remedial measures lead to the hope that deaths from cancer may speedily show a declining tendency.

DEATH RATES FROM CANCER PER 100,000 OF POPULATION.

1906	1907	1908	1909	1910	1911	1912	1913	1914	1915
58.9	60.7	60.9	64.1	65.3	65.4	65.4	72.2	72.7	74.0

DEATHS FROM CANCER AND OTHER MALIGNANT TUMORS BY ORGAN OR LOCALITY, 1906 TO 1915, INCLUSIVE.

	Total.	Buccal cavity.	Stomach, liver.	Peritonaeum, intestines, rectum.	Female genital organs.	Breast.	Skin.	Other organs or unspecified.
1906,	4,208	167	1,620	440	595	399	160	834
1907,	4,382	114	1,665	480	640	368	188	926
1908,	4,520	177	1,733	502	738	452	169	749
1909,	4,845	185	2,008	570	714	502	217	649
1910,	5,100	207	2,098	599	768	513	176	739
1911,	5,177	192	2,113	658	833	480	181	720
1912,	5,426	229	2,212	676	859	554	180	716
1913,	5,854	231	2,336	752	974	569	213	788
1914,	5,997	294	2,345	723	943	649	222	821
1915,	6,202	241	2,512	774	968	604	234	869

DISEASES OF THE NERVOUS SYSTEM.

The death rate from diseases in this group shows a slight decrease from the previous year, 131.7 per 100,000 of population as compared with 132.1 for the year 1914. Cerebral hemorrhage and apoplexy caused 61% of the total deaths in this group.

DISEASES OF THE CIRCULATORY SYSTEM.

Organic disease of the heart was as always the most important individual cause in this group of diseases of the circulatory system, contributing 77.3% of the total. The death rate for the entire group was 182.8 per 100,000 of population.

DISEASES OF THE RESPIRATORY SYSTEM.

The death rate from diseases in this group presents a slight increase over the previous year, 184.1 as compared with 181.4 in 1914. Pneumonia continued as the most prominent individual cause, and exclusive of broncho-pneumonia contributed 45.4% of the total.

DISEASES OF THE DIGESTIVE SYSTEM.

The death rates from the diseases embraced in this group continue to show a declining tendency, the rate for 1915 (171.1) being 30% less than the rate for 1906. This decline is largely accounted for by the decrease in deaths of infants under one year of age from diarrhoea and enteritis, which, however, continue to contribute 43.7% of the total deaths in the entire group.

NONVENEREAL DISEASES OF THE GENITOURINARY SYSTEM.

Deaths from the causes in this group show a slightly increasing tendency, due to the influence of acute nephritis and Bright's disease which contributed 88.2% of the total.

EXTERNAL CAUSES.

Deaths from violence show in the main a gratifying decrease which has been rather continuous throughout the ten-year period (1906-1915). The most important declines are found in the fatalities associated with the operation of steam railways and mines; and the most notable increase, in the number of fatal automobile accidents, which amounted to 466 for the year.

DEATHS FROM EXTERNAL CAUSES, 1906 TO 1915, INCLUSIVE.

	Suicide.	Burns and scalds.	Drowning (accidental).	Gunshot wounds (accidental).	Injuries in mines.	Steam railway injuries.	Homicide.
1906,	780	847	555	149	983	2,159	365
1907,	802	971	566	139	1,508	2,134	406
1908,	988	861	573	150	1,326	1,457	365
1909,	951	824	493	121	1,248	1,386	331
1910,	975	831	496	133	1,222	1,521	362
1911,	1,033	784	666	138	1,341	1,365	347
1912,	1,032	893	502	136	1,136	1,458	352
1913,	1,073	855	566	142	1,302	1,455	432
1914,	1,035	847	521	124	1,149	1,224	397
1915,	1,081	861	534	112	1,109	1,153	402

TABULATIONS CONCERNING THE DEATHS OF THE YEAR.

The following general Mortality Tables are presented:

Table 1. Deaths from all causes in the entire State and in each municipality having more than 5,000 population, for groups of municipalities having less than 5,000 population, and for each county exclusive of all municipalities, by months. (Stillbirths excluded.)

Table 2. Deaths from each cause and class of causes (International Classification) by sex and age periods. (Stillbirths excluded.)

Table 3. Deaths in the entire State and in each municipality having more than 10,000 population, and for the rural sections of each county, including all municipalities having less than 10,000 population, by age periods, and in certain municipalities by color. (Stillbirths excluded.)

Table 4. Deaths in the entire State and in each municipality having more than 10,000 population, and for the rural sections of each county, including all municipalities having less than 10,000 population, from certain specified causes, and in certain cities by color. (Stillbirths excluded.)

Table 5. Deaths in the entire State in each municipality having more than 10,000 population, and for the rural sections of each county, including all municipalities having less than 10,000 population, by color, nativity and parent nativity. (Stillbirths excluded.)

Table 6. Deaths in the entire State and for municipalities having more than 100,000 population, by sex, age, color, nativity and parent nativity. (Stillbirths excluded.)

Table 7. Deaths in the entire State and in municipalities of more than 100,000 population, from certain causes, by months and color. (Stillbirths excluded.)

Table 8. Deaths in the entire State and in cities having more than 100,000 population, for certain causes and colors, by subdivisions of days, weeks and months for the first year of life. (Stillbirths excluded.)

Table 9. Deaths in each city having more than 100,000 population in 1910 from certain causes by age and in certain localities by color. (Stillbirths excluded.)

MORTALITY TABLE 1.

Deaths from all causes in the entire State and for each municipality having more than 5,000 population, for the group of municipalities having less than 5,000 population, and for the rural sections of each county exclusive of all municipalities, by months. (Stillbirths excluded.)

Registration Area.	All Deaths.	Month of Death.											
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Entire State,	115,284	9,704	9,503	11,383	11,355	8,863	8,601	8,467	9,189	9,246	9,074	8,875	11,633
Total all municipalities having more than 5,000 population,	67,930	5,821	5,426	6,490	6,481	5,232	4,778	5,110	5,399	5,253	5,258	5,362	7,380
Total all municipalities having less than 5,000 population,	14,237	1,181	1,254	1,489	1,473	1,025	969	998	1,184	1,130	1,178	1,057	1,299
Total rural (exclusive of all municipalities),	33,117	2,702	2,823	3,404	3,401	2,606	2,254	2,359	2,597	2,863	2,638	2,516	2,954
Municipalities (5,000 and Over).													
Allentown,	994	88	77	103	83	74	63	85	82	83	77	78	101
Altoona,	709	57	67	66	60	53	66	46	56	57	49	60	72
Ambridge,	73	6	6	12	5	5	2	7	6	6	6	6	6
Archbald,	130	5	8	15	16	7	5	13	10	7	17	13	14
Ashland,	91	10	10	6	12	2	5	13	3	7	9	6	8
Ashley,	83	7	3	9	7	10	4	9	7	6	5	5	11
Bangor,	64	5	6	9	2	8	4	5	5	6	6	3	5
Beaver Falls,	179	19	8	21	21	18	8	6	17	17	14	8	22
Bellevue,	114	9	8	16	7	11	13	6	6	9	8	9	12
Berwick (Columbia County),	72	7	8	5	7	8	7	5	2	4	4	5	6
Bethlehem,	158	10	15	12	12	18	11	11	9	11	13	10	26
Blakely,	115	8	9	12	14	10	9	8	5	11	7	7	15
Bloomsburg,	106	9	7	13	7	12	4	6	5	13	11	10	5
Braddock,	387	17	24	45	30	37	31	44	38	32	29	24	36
Bradford,	231	17	10	25	26	19	19	15	19	20	19	22	20

Bristol,	140	9	11	17	18	9	13	12	10	6	9	13	13
Butler,	255	15	13	17	22	24	19	22	25	25	24	25	24
Carbondale,	283	26	21	20	31	25	19	24	32	24	20	21	20
Carlisle,	152	14	11	18	12	18	9	13	9	13	11	15	9
Carnegie,	138	7	10	13	9	10	7	6	12	13	16	22	13
Carrick,	84	6	7	10	9	9	3	6	6	5	5	9	9
Catasauqua,	44	1	6	4	5	3	2	4	7	1	5	2	4
Chambersburg,	175	15	9	21	15	21	13	13	11	11	11	18	17
Charleroi,	92	9	9	8	3	6	8	11	8	8	9	7	6
Chester,	658	56	48	63	53	58	45	58	60	52	48	57	60
Clearfield,	86	10	4	4	8	9	5	6	8	6	10	8	8
Coaldale (Schuylkill County),	117	13	10	9	8	10	4	2	16	13	8	16	8
Coatesville,	131	18	9	17	11	9	7	12	7	12	9	8	12
Columbia,	157	8	20	19	14	13	6	15	11	10	10	9	22
Connellsville,	179	7	18	21	20	10	16	8	14	18	19	14	14
Conshohocken,	108	6	7	8	12	6	1	3	11	17	7	9	21
Coraopolis,	60	4	6	7	6	5	3	3	9	3	3	5	6
Corry,	98	10	8	8	11	6	13	5	9	9	6	4	9
Danville,	99	6	3	13	11	11	5	8	11	10	8	8	5
Darby,	58	4	3	7	8	6	5	5	2	5	5	6	2
Dickson City,	110	7	12	11	11	3	6	7	10	12	10	9	12
Donora,	101	6	9	6	7	6	7	6	8	12	9	9	16
DuBois,	128	12	12	12	13	9	9	8	13	10	12	9	9
Dunmore,	359	27	46	36	24	27	25	31	25	29	27	39	23
Duquesne,	193	17	19	13	22	15	15	17	17	13	14	18	13
Duryea,	85	10	7	3	13	5	7	10	4	5	7	7	7
East Conemaugh,	54	9	6	6	4		5	3	6	4	1	3	7
East Pittsburgh,	55	3	6	3	7	6	2	3	2	7	7	6	3
Easton,	472	41	37	51	42	40	38	34	48	34	30	30	47
Edwardsville,	103	7	12	10	10	5	8	11	3	12	10	6	9
Erie,	1,107	94	95	110	99	84	87	95	107	88	81	85	82
Etna,	69	9	9	7	7	2	3	5	9	6	2	2	8
Farrell,	142	13	8	16	16	5	10	8	20	17	10	8	11
Forest City,	84	7	12	9	7	3	12	8	12	7	2	1	4
Franklin (Venango County),	104	9	9	7	12	4	7	9	6	9	13	10	9
Freeland,	90	6	2	11	11	7	6	5	4	10	5	14	9
Gilberton,	111	3	8	13	14	12	2	7	15	8	4	9	16
Glassport,	66	5	3	9	3	6	5	2	4	7	7	6	9
Greensburg,	209	14	21	18	21	13	17	17	19	23	15	16	15
Greenville,	88	14	4	10	7	8	7	4	10	7	1	8	8

MORTALITY TABLE 1—Continued.

Registration Area.	All Deaths.	Month of Death.											
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Hanover,	88	2	5	9	8	6	6	11	5	9	9	7	11
Harrisburg,	1,004	87	75	100	88	84	76	73	78	74	93	100	76
Hazleton,	523	49	37	41	62	44	32	32	47	41	44	38	56
Homestead,	235	18	19	23	16	15	15	16	29	20	19	26	19
Huntingdon,	122	8	9	12	8	11	4	8	10	15	14	10	13
Indiana,	84	13	6	12	13	2	2	7	8	6	7	3	5
Jeannette,	83	4	8	7	8	2	3	9	11	10	9	7	5
Jersey Shore,	64	6	4	5	7	9	3	5	7	4	1	5	8
Johnstown,	937	74	69	94	95	68	67	65	83	88	71	76	87
Juniata,	61	9	3	8	5	6	5	7	3	5	3	5	2
Kane,	88	8	10	6	4	9	6	9	8	7	9	7	5
Kingston,	75	4	6	8	6	7	10	8	11	6	3	3	3
Knoxville (Allegheny County),	65	9	7	6	6	9	5	5	2	4	5	3	4
Lancaster,	809	65	78	73	77	61	69	50	57	66	61	57	95
Lansford,	102	8	6	8	8	13	3	5	11	15	3	10	12
Larksville,	84	12	9	8	8	2	4	4	7	6	13	6	5
Latrobe,	100	12	9	10	11	6	6	6	6	9	9	6	16
Lebanon,	326	30	38	25	32	24	22	27	22	26	26	32	22
Lehighton,	71	7	4	5	7	5	6	7	7	7	7	6	3
Lewistown,	124	15	13	9	8	12	9	4	9	6	4	17	18
Lock Haven,	153	4	13	21	19	11	13	14	10	19	5	13	11
Luzerne,	67	5	6	2	9	2	7	9	6	7	3	5	6
McKeesport,	634	50	48	68	76	49	43	47	48	52	55	48	50
McKees Rocks,	198	16	14	13	18	8	11	25	16	19	12	20	26
Mahanoy City,	229	15	13	18	24	10	15	23	22	20	21	21	27
Meadville,	222	19	13	26	22	20	23	16	19	14	18	8	24
Middletown,	61	10	4	5	5	8	6	3	4	2	4	3	7
Millvale,	71	8	3	3	4	11	5	6	7	8	5	4	7
Milton,	103	6	11	11	8	12	13	6	8	7	7	8	6
Minersville,	154	8	9	10	5	11	4	16	8	9	22	20	32

Monessen,	169	13	6	12	12	9	14	11	24	14	21	13	20
Monongahela,	100	9	9	14	4	6	7	8	9	9	7	6	12
Mount Carmel,	197	16	14	18	17	13	12	11	19	12	20	25	20
Mount Pleasant,	81	6	7	12	8	4	7	4	3	9	4	9	8
Munhall,	49	4	2	5	5	2	3	4	3	7	6	2	6
Nanticoke,	284	25	20	22	19	27	19	23	28	19	28	30	24
New Brighton,	125	9	12	7	11	12	9	8	11	9	10	13	14
New Castle,	513	39	41	67	43	35	29	36	40	43	58	41	41
New Kensington,	117	12	11	11	12	8	4	9	10	6	6	16	12
Norristown,	669	61	59	68	58	48	58	59	41	47	53	45	69
North Braddock,	102	8	10	15	19	7	16	15	16	13	11	11	21
Northampton,	150	15	13	8	12	10	10	13	14	14	13	9	19
Oil City,	216	21	15	29	27	17	15	14	16	17	13	15	17
Old Forge,	151	21	20	17	18	10	12	9	7	9	9	10	9
Olyphant,	167	14	13	14	15	7	13	19	16	17	8	10	21
Philadelphia,	26,291	2,306	2,055	2,452	2,572	2,056	1,817	1,918	1,884	1,933	1,931	1,984	3,383
Phoenixville,	192	14	18	17	23	13	7	11	13	27	17	15	17
Pittsburgh,	8,728	691	671	855	880	678	643	651	684	644	714	684	933
Pittston,	297	36	19	27	31	23	27	39	17	15	18	19	32
Plymouth,	175	19	11	12	14	17	11	18	14	14	12	16	17
Pottstown,	231	23	23	24	20	21	19	14	16	20	15	17	19
Pottsville,	402	38	45	27	31	24	23	31	37	35	30	43	38
Punxsutawney,	161	14	19	14	13	7	11	11	6	10	17	11	28
Rankin,	101	11	8	11	9	5	9	13	6	3	6	6	14
Reading,	1,455	125	107	143	140	118	108	98	122	117	127	131	119
Ridgway,	68	6	5	7	5	7	6	6	5	7	3	7	4
Rochester,	143	19	10	12	15	7	5	12	10	10	11	11	21
Saint Clair (Allegheny County),	64	6	8	6	4	6	9	3	4	1	7	5	5
Saint Clair (Schuylkill County),	92	8	7	16	6	6	4	10	8	6	5	7	9
Saint Marys,	56	9	4	9	5	5	2	5	3	4	4	3	3
Sayre,	223	9	24	21	16	23	18	14	16	20	27	16	19
Scottdale,	47	3	6	6	7	2	3	2	4	2	3	2	7
Scranton,	2,114	202	174	205	206	155	138	191	189	173	171	149	161
Shamokin,	244	30	28	23	25	16	16	13	23	9	19	17	25
Sharon,	252	29	19	29	20	15	11	13	27	20	24	20	25
Sharpsburg,	83	5	6	5	11	10	4	9	4	7	6	5	11
Shenandoah,	392	37	28	22	21	30	32	61	48	29	31	24	29
South Bethlehem (Northampton County),	300	22	23	28	31	17	22	24	23	34	24	20	32
Steelton,	156	12	19	14	17	5	15	13	11	11	8	14	17
Sunbury,	176	28	15	18	15	10	13	9	12	12	21	10	13

MORTALITY TABLE 1—Continued.

Registration Area.	All Deaths.	Month of Death.											
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Swissvale,	83	11	3	6	10	6	2	7	10	1	8	8	11
Swoyersville,	89	5	7	12	3	8	5	10	13	3	8	6	9
Tamaqua,	123	11	7	10	13	11	9	6	16	12	4	11	13
Tarentum,	110	11	7	7	12	9	5	5	13	7	10	12	12
Taylor,	134	15	4	12	16	10	9	10	19	8	9	13	9
Throop,	99	11	7	10	6	7	8	3	11	11	12	7	6
Titusville,	129	5	10	14	11	12	7	11	12	14	12	9	12
Tyrone,	88	10	9	5	6	8	7	7	7	9	9	7	4
Uniontown (Fayette County),	266	15	16	28	22	20	17	17	29	19	26	28	29
Warren,	159	20	13	15	11	17	14	8	7	16	14	11	13
Washington,	294	29	24	26	26	19	16	25	26	25	21	34	23
Waynesboro,	93	8	11	12	9	6	6	7	6	8	6	6	8
West Berwick,	61	3	10	11	4	3	5	8	4	2	1	6	4
West Chester,	271	16	33	24	21	29	18	15	24	17	23	23	28
West Pittston,	83	6	9	9	9	6	9	8	8	2	3	6	8
Wilkes-Barre,	1,215	114	107	101	111	91	81	97	130	113	91	91	88
Wilkinsburg,	285	20	29	27	22	24	26	20	19	23	15	23	37
Williamsport,	555	52	47	60	56	31	38	28	50	39	51	48	55
Wilmerding,	51	5	3	4	2	9	5	5	4	4	3	4	3
Windber,	147	17	12	11	13	8	19	4	15	16	15	9	8
Winton,	85	9	5	6	5	3	4	16	8	8	6	4	11
York,	630	44	64	74	64	47	42	33	66	37	47	34	78
Counties (Rural).													
Adams,	262	18	17	32	35	19	17	17	21	26	24	11	25
Allegheny,	2,624	205	197	258	261	196	172	210	241	255	217	186	226
Armstrong,	525	43	38	57	63	46	43	25	41	44	39	39	47
Beaver,	277	22	21	34	27	18	17	25	17	33	21	22	20
Bedford,	314	25	43	33	24	18	14	24	27	23	28	29	26

Berks,	1,159	101	84	125	111	112	81	106	83	81	99	83	93
Blair,	416	41	34	50	38	41	29	26	24	26	35	34	38
Bradford,	456	33	30	53	55	40	30	34	22	42	42	27	48
Bucks,	601	58	56	69	78	44	29	40	29	45	37	44	72
Butler,	430	38	26	47	40	36	20	32	37	43	32	39	40
Cambria,	882	73	77	76	96	79	64	75	51	96	68	62	65
Cameron,	35	2	3	1	1	1	4	2	6	4	6	3	2
Carbon,	292	19	29	28	29	30	13	15	30	28	16	33	22
Centre,	403	36	35	50	27	35	30	22	25	45	34	32	35
Chester,	861	77	76	81	93	71	55	62	60	79	76	65	66
Clarion,	203	23	29	21	32	16	20	18	28	23	30	21	32
Clearfield,	705	70	75	79	78	44	35	50	50	52	56	64	52
Clinton,	156	11	17	17	18	11	13	9	15	16	7	9	13
Columbia,	229	21	24	23	21	17	19	20	14	18	24	13	15
Crawford,	447	26	38	67	40	39	32	31	26	34	35	42	37
Cumberland,	302	30	24	42	34	19	26	14	22	24	25	21	21
Dauphin,	574	49	55	62	47	51	42	30	35	40	62	55	46
Delaware,	537	42	39	45	59	47	34	50	40	43	43	35	60
Elk,	169	14	15	21	19	19	9	7	11	15	12	9	18
Erie,	389	20	30	43	48	34	28	31	26	31	29	35	34
Fayette,	1,477	108	113	132	112	105	92	108	149	166	156	122	114
Forest,	71	3	13	5	6	11	3	7	4	5	4	3	7
Franklin,	614	55	65	72	58	48	40	40	45	46	45	41	59
Fulton,	118	13	6	14	11	10	8	7	8	9	13	6	13
Greene,	270	23	22	41	29	23	16	10	18	22	13	18	35
Huntingdon,	266	24	20	35	27	26	18	20	16	21	18	24	17
Indiana,	644	52	51	72	87	45	36	35	40	54	58	64	50
Jefferson,	405	33	33	34	56	39	34	27	24	35	28	25	37
Juniata,	153	7	18	18	21	7	9	9	8	13	12	12	19
Lackawanna,	409	32	40	37	31	33	36	38	37	39	24	28	34
Lancaster,	1,066	76	115	120	119	86	71	64	96	63	72	85	99
Lawrence,	339	23	39	38	39	26	21	14	36	22	24	22	35
Lebanon,	444	41	40	41	59	37	34	28	25	33	32	30	44
Lehigh,	714	62	70	66	70	59	47	47	57	58	56	49	73
Luzerne,	1,294	111	104	115	110	103	93	116	130	108	110	97	97
Lycoming,	331	23	25	33	47	24	24	25	19	33	21	28	29
McKean,	188	13	15	24	19	21	19	13	12	9	11	19	13
Mercer,	389	29	35	41	32	41	29	29	33	39	18	34	29
Mifflin,	230	18	13	21	28	22	8	11	25	22	21	16	25
Monroe,	168	23	14	16	21	12	13	12	15	12	10	8	12

MORTALITY TABLE 1—Continued.

Registration Area.	All Deaths.	Month of Death.											
		Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Montgomery,	1,237	122	113	118	120	88	103	90	88	93	98	74	130
Montour,	248	16	21	22	16	11	27	17	23	41	17	16	21
Northampton,	542	37	45	55	62	34	29	50	24	53	37	46	70
Northumberland,	625	43	38	48	63	53	35	53	47	57	57	49	82
Perry,	181	16	17	16	28	13	15	10	17	13	12	13	11
Pike,	74	5	9	8	7	6	7	4	11	5	7	2	3
Potter,	137	9	13	15	17	13	16	9	12	11	5	6	11
Schuylkill,	1,246	89	106	116	100	94	100	101	110	121	83	111	115
Snyder,	165	15	15	15	21	13	12	9	9	10	11	15	20
Somerset,	585	37	50	78	68	26	46	36	51	43	52	46	52
Sullivan,	100	11	7	11	13	9	7	8	1	7	10	4	12
Susquehanna,	328	35	37	33	41	24	25	30	30	20	7	27	19
Tioga,	348	39	32	32	39	31	21	26	23	17	28	28	32
Union,	118	6	10	11	14	4	11	9	10	9	12	13	9
Venango,	279	27	17	33	23	31	25	20	16	21	23	22	21
Warren,	393	36	31	33	30	29	33	23	27	38	37	32	44
Washington,	935	72	79	90	86	60	56	61	94	91	86	78	82
Wayne,	327	39	33	35	36	25	25	17	26	33	18	18	22
Westmoreland,	1,604	132	116	165	165	126	82	108	156	151	150	109	143
Wyoming,	143	12	13	15	16	16	7	6	17	12	6	10	13
York,	571	38	58	66	79	39	45	37	27	42	39	53	48

MORTALITY TABLE 2.

Deaths in the entire State from each cause and class of causes, according to the International Classification, by sex and ages of decedents. (Stillbirths excluded.)

	Registration Area.		Age.													
			All Ages	Under 1	1	2	3	4	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39
	All Causes,	M.	61,968	13,519	2,272	957	534	409	17,691	1,262	791	1,323	1,958	2,240	2,357	2,864
		F.	53,376	10,414	2,081	820	492	353	14,160	1,150	730	1,240	1,678	1,808	1,758	2,022
	I. General Diseases,	M.	13,628	1,005	515	319	231	163	2,233	476	233	463	863	917	943	982
		F.	13,512	794	519	295	201	160	1,969	507	327	627	785	857	718	750
1	Typhoid fever,	M.	633	2	3	5	3	4	17	19	21	75	102	89	84	72
		F.	401	4	1	4	2	5	16	29	37	56	64	48	41	23
2	Typhus fever,	M.														
		F.														
3	Relapsing fever,	M.														
		F.														
4	Malaria,	M.	25	2			1	1	4	1			1	5		2
		F.	9		2				2		1			1		
5	Smallpox,	M.														
		F.														
6	Measles,	M.	314	112	114	41	22	10	299	13	1					
		F.	251	66	79	35	27	13	220	23		2	2	1	1	1
7	Scarlet fever,	M.	141	11	17	12	22	14	76	46	9	6	2	2		
		F.	160	13	24	19	12	5	73	50	14	6	3	7	3	2
8	Whooping cough,	M.	269	171	61	15	7	7	261	6	1					
		F.	304	151	99	30	7	4	291	12						
9	Diphtheria and croup,	M.	819	83	127	143	111	84	548	177	49	11	7	5	3	7
		F.	813	49	137	127	100	89	502	222	46	12	8	5	5	3

MORTALITY TABLE 2—Continued.

	Registration Area.		Age.												
			All Ages	Under 1	1	2	3	4	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39
10	Influenza,	M.	656	86	21	12	5	3	127	7	5	8	6	12	16	8
		F.	867	60	19	8	6	1	94	10	6	11	7	9	19	17
11	Miliary fever,	M.														
		F.														
12	Asiatic fever,	M.														
		F.														
13	Cholera nostras,	M.	24	8	3				11						1	1
		F.	30	5	2		1		8	1	1				1	
14	Dysentery,	M.	93	22	12	7	3	2	46	3		2			3	2
		F.	123	20	14	3	1	3	41	9	1		3			
15	Plague,	M.														
		F.														
16	Yellow fever,	M.														
		F.														
17	Leprosy,	M.														
		F.														
18	Erysipelas,	M.	148	42	5	2	1		50			1	1	2	11	7
		F.	130	55	4	1			60	1	1	1	4	1	4	1
19	Other epidemic diseases,	M.	26	14	4	4		2	24	1						
		F.	27	8	7	5	1	1	22	1	1		1	1		
20	Purulent infection and septichaemia,	M.	118	13	2	3	5	1	24	7	4	6	4	5	2	7
		F.	77	6	3		3		12	3	3	3	4	5	3	5
21	Glanders,	M.														
		F.														

22	Anthrax,	M.	4										1	1	
		F.													
23	Rabies,	M.	5	1				1	2				1		1
		F.	1						1						
24	Tetanus,	M.	96	11		4	3	18	11	13	7	6	5	7	5
		F.	30	3	1	1	2	7	9	2	1		1		2
25	Mycoses,	M.													
		F.	2	1				1							
26	Pellagra,	M.													
		F.	6							2					1
27	Beriberi,	M.													
		F.													
	Tuberculosis (total),	M.	6,017	184	107	55	35	21	402	113	71	289	602	682	686	692
		F.	4,621	155	90	48	30	25	348	85	149	461	610	632	491	451
28	Tuberculosis of the lungs,	M.	5,059	60	35	14	11	6	126	27	37	228	512	614	615	618
		F.	3,792	44	30	14	10	8	106	29	100	390	538	553	442	398
29	Acute miliary tuberculosis,	M.	216	9	3	1		1	14	8	5	22	38	24	17	30
		F.	204	7	6	4		2	19	7	13	34	39	29	24	12
30	Tuberculosis meningitis,	M.	319	76	52	32	21	9	190	39	12	14	12	5	11	13
		F.	253	64	45	23	15	10	157	28	20	9	9	8	4	3
31	Abdominal tuberculosis,	M.	205	18	11	4	3	2	38	22	6	9	19	22	15	16
		F.	203	23	5	2	4	4	38	10	11	14	10	23	11	21
32	Pott's disease,	M.	69		1	2		1	4	7	1	8	10	4	8	6
		F.	52	3	1	1	1	1	7	9	1	5	2	7	4	4
33	White swelling,	M.	37	5	1	1		1	8	4	3	3	3	4	1	1
		F.	23	2	1				3	2	2		4	3	1	2
34	Tuberculosis of other organs,	M.	76	14	3	1			18	6	3	3	4	8	8	5
		F.	63	7	2	2			11	1	1	6	4	7	4	9
35	Disseminated tuberculosis,	M.	36	2	1			1	4		4	2	4	1	5	3
		F.	31	5		2			7		1	3	4	2	1	2
36	Rickets,	M.	38	25	7	2	1	1	36	2						
		F.	34	10	8	2	1		21		1					
37	Syphilis,	M.	345	136	9	3			148	2	3	7	3	21	16	22
		F.	245	126	12	2	1	1	142		4	5	7	13	8	9

MORTALITY TABLE 2—Continued.

	Registration Area.		Age.												
			All Ages	Under 1	1	2	3	4	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39
38	Gonococcus infection,	M.	8	5					5				1	1		
		F.	44	12	2		1		15				3	7	4	8
	Cancer and other malignant tumors (total).	M.	2,407	12	3	1	3	1	20	8	8	15	18	25	44	70
		F.	3,817	7	2	3		3	15	2	2	8	18	49	86	159
39	Cancer of the buccal cavity,	M.	182							1		1			2	4
		F.	59								1		1		2	
40	Cancer of the stomach, liver,	M.	1,265	1			1		2	3	1	2	3	10	16	33
		F.	1,307		1	1		1	3	2			4	5	17	30
41	Cancer of the peritonaeum, intestines, rectum.	M.	316	1					1	1	1	4	4	6	16	12
		F.	458					2	2				1	10	7	14
42	Cancer of the female genital organs,	M.														
		F.	968	1					1			1	7	23	37	60
43	Cancer of the breast,	M.	9													1
		F.	595										1	3	13	31
44	Cancer of the skin,	M.	134	1	1				2				1		1	4
		F.	190	1					1				1			3
45	Cancer of other organs and of organs not specified.	M.	550	7	2	1	2	1	13	3	6	8	10	8	8	16
		F.	319	4	1	2			7		1	7	3	8	9	12
46	Other tumors (tumors of the female genital organs excepted).	M.	11	2					2					1	1	
		F.	11	1					1						1	
47	Acute articular rheumatism,	M.	249	5	5	5	2	2	19	37	28	20	14	3	11	10
		F.	228		1	1	4	3	9	24	33	22	16	11	4	6
48	Chronic rheumatism and gout,	M.	28										1		1	1
		F.	62												2	3

49	Scurvy,	M.	9	5	2			1	8		1					
		F.	6	4					4							
50	Diabetes,	M.	521			2		1	3	12	10	11	24	20	13	17
		F.	782	1	2	1	1	2	7	14	20	21	13	17	18	23
51	Exopthalmic goitre,	M.	6										1	1		2
		F.	96								1	7	11	8	7	10
52	Addison's disease,	M.	13									1	1	1		2
		F.	19									1	1	1	3	1
53	Luchaemia,	M.	94	4	4	2	2	4	16	5	7	1	3	6	7	3
		F.	45		1	1	1	1	4	2		1	4	2	3	3
54	Anaemia, chlorosis,	M.	141	9	1	1	1	1	13	2	1	1	1	1	6	10
		F.	201	3	5		1	1	10	4	1	7	6	10	5	14
55	Other general diseases,	M.	84	42	8	4	3		57	2	1	1	1	5	1	2
		F.	81	35	5	4		1	45	4	1	1	1	3	1	
56	Alcoholism (acute or chronic),	M.	274									1	4	23	34	40
		F.	51											3	7	5
57	Chronic lead poisoning,	M.	14											1	1	
		F.	1													
58	Other chronic occupation poisonings,	M.														
		F.														
59	Other chronic poisonings,	M.	9												1	
		F.	38									1		2	2	3
	II. Diseases of the Nervous System and of the Organs of Special Sense.	M.	5,655	518	94	62	22	19	715	73	40	69	54	70	117	196
		F.	5,390	386	82	39	27	17	551	67	32	56	43	49	79	87
60	Encephalitis,	M.	59	14	2	6			22	5	1	2	2	5	4	2
		F.	40	8	4	1	1	1	15	4		3		2	3	2
61	Meningitis (total),	M.	302	110	32	30	8	8	188	29	12	17	11	7	11	8
		F.	233	76	32	16	14	7	145	36	7	10	6	3	2	2
	Simple meningitis,	M.	222	79	24	24	6	5	138	18	8	12	8	6	8	8
		F.	173	65	23	10	10	4	112	23	3	6	4	2	1	2
	Cerebrospinal meningitis (undefined),	M.	38	15	3	2	2	1	23	6		3	3		1	
		F.	22	3	1	2	1	2	9	5	2	2	1	1	1	
	Cerebrospinal fever,	M.	42	16	5	4		2	27	5	4	2		1	2	
		F.	38	8	8	4	3	1	24	8	2	2	1			

MORTALITY TABLE 2—Continued.

	Registration Area.		Age.												
			All Ages	Under 1	1	2	3	4	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39
62	Locomotor ataxia,	M.	164											2	2	12
		F.	80											2		5
63	Other diseases of the spinal cord,	M.	248	12	8	7	3		30	10	6	5	5	3	4	4
		F.	223	10	9	4	6	1	30	6	3	3		3	6	3
	Acute anterior poliomyelitis,	M.	41	7	7	7	3		24	6	4	1	1			
		F.	44	10	8	3	3	1	25	6	1	1		1	1	
	Other diseases of the spinal cord,	M.	207	5	1				6	4	2	4	4	3	4	4
		F.	179		1	1	3		5		2	2		2	5	3
64	Cerebral haemorrhage, apoplexy,	M.	3,248	15	2	2	3	3	25	7	1	7	5	10	24	54
		F.	3,492	10	4	3		1	18	2	2	4	9	2	23	36
65	Softening of the brain,	M.	66													1
		F.	42													
66	Paralysis without special cause,	M.	273	2					2			2		2	2	6
		F.	317	1					1			1		3	1	5
67	General paralysis of the insane,	M.	433										1	6	38	70
		F.	187										3	3	10	8
68	Other forms of mental alienation,	M.	50									1	3	1	3	8
		F.	99								2	1	5	7	9	6
69	Epilepsy,	M.	165	7	1		2	3	16	5	7	20	17	20	14	13
		F.	132	4	3	4	1	2	14	2	2	14	10	15	13	7
70	Convulsions (nonpuerperal),	M.	8							4		1		1		1
		F.	14							1	1	4	2		1	1
71	Convulsions of infants,	M.	357	308	35	11	3		357							
		F.	271	247	18	3	2	1	271							

72	Chorea,	M.	1								1		1	1		
		F.	14								4	1	4	2	1	
73	Neuralgia and neuritis,	M.	16	1				1	2						1	1
		F.	28												2	1	1
74	Other diseases of the nervous system,	M.	153	18	2	1	2	2	25	6	7	7	6	7	9	13
		F.	143	14	3	1	1	1	20	7	7	7	2	5	7	9
75	Diseases of the eyes and their annexa,	M.	9	3		1	1		5							
		F.	3										2			
76	Diseases of the ears,	M.	100	28	9	4		2	43	6	6	6	3	5	6	4
		F.	72	16	9	7	2	3	37	5	7	3	4	1	3	1
	III. Diseases of the Circulatory System.	M.	7,924	129	11	10	13	11	174	80	89	120	113	127	161	263
		F.	7,400	113	18	8	13	10	162	106	123	110	130	152	139	239
77	Pericarditis,	M.	44			1			1	1	1	5	1			4
		F.	37		1	1			2	2	1		1	2	2	4
78	Acute endocarditis,	M.	439	23	2	2	3	2	32	18	12	13	16	19	26	32
		F.	417	22	5		1	1	29	28	19	14	24	23	22	24
79	Organic diseases of the heart,	M.	6,026	68	3	6	10	8	95	58	76	100	92	95	120	198
		F.	5,820	67	7	6	11	7	98	72	100	89	96	114	102	189
80	Angina pectoris,	M.	364	2					2			1	1	4	5	14
		F.	230							1	1	2	3	4	3	6
81	Diseases of the arteries, atheroma, aneurysms, etc.	M.	840							1		1	1	2	6	10
		F.	661	1	1				2						1	4
82	Embolism and thrombosis,	M.	148	9					9				2	6	3	5
		F.	155	6	1		1		8	1		3	5	5	5	9
83	Diseases of the veins (varices, haemorrhoids, phlebitis, etc.)	M.	12											1	1	
		F.	59										1	3	3	2
84	Diseases of the lymphatic system (lymphangitis, etc.)	M.	36	23	5	1			29	2						
		F.	26	15	3	1			19	2	2	2			1	
85	Haemorrhage; other diseases of the circulatory system.	M.	15	4	1			1	6							
		F.	15	2				2	4					1		1
	IV. Diseases of the Respiratory System.	M.	8,410	2,393	639	242	99	88	3,491	174	63	119	152	192	233	286
		F.	7,322	1,784	588	199	97	65	2,733	140	76	88	121	113	136	185
86	Diseases of the nasal forsae,	M.	8	6					6							
		F.	8	3					3					1		1

MORTALITY TABLE 2—Continued.

	Registration Area.		Age.												
			All Ages	Under 1	1	2	3	4	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39
87	Diseases of the larynx,	M.	84	18	10	13	4	5	50	10	3	2	1	2	1	1
		F.	47	8	8	3	3	6	28	2	3		1	2	1	
88	Diseases of the thyreoid body,	M.	7	1					1				1	2		1
		F.	38	1			1	1	3	1	1		8	4	1	5
89	Acute bronchitis,	M.	499	310	49	14	8	4	385	5	1	1	1	2		3
		F.	485	220	83	15	6	4	328	5		2	1	2		3
90	Chronic bronchitis,	M.	265	12	2	1			15	3		1	1	2	1	6
		F.	352	14	3				17	7		1	2	2	4	4
91	Bronchopneumonia,	M.	2,792	1,345	379	118	43	32	1,917	61	16	12	12	25	23	39
		F.	2,637	1,034	330	108	49	32	1,553	50	17	10	20	15	20	16
92	Pneumonia,	M.	4,025	627	207	83	38	45	1,000	79	39	96	120	146	187	212
		F.	2,981	446	154	64	33	18	715	68	50	68	78	78	99	144
	Lobar pneumonia,	M.	3,163	375	146	52	28	34	635	66	31	80	103	126	160	189
		F.	2,303	278	110	45	28	15	476	50	31	53	59	70	93	122
	Pneumonia (undefined),	M.	862	252	61	31	10	11	365	13	8	16	17	20	27	23
		F.	678	168	44	19	5	3	239	18	19	15	19	8	6	22
93	Pleurisy,	M.	194	12	14	11	4	2	43	14	3	4	10	7	9	9
		F.	169	12	8	7	4	3	34	5	4	3	6	2	6	3
94	Pulmonary congestion, pulmonary apoplexy.	M.	160	59	7	1	2		69	1	1	1	1		2	4
		F.	128	41	2		1	1	45	2			2	1	1	2
95	Gangrene of the lung,	M.	17	1					1			1	3	1	1	
		F.	8										1	2	1	1
96	Asthma,	M.	194	1		1			2			1	1	3	1	2
		F.	168	1		1			2	1					5	2

97	Pulmonary emphysema,	M.	23	1					1					1	1	1
		F.	9			1			1							
98	Other diseases of the respiratory system (tuberculosis excepted).	M.	140		1				1			1	2	4	3	8
		F.	52	4					4		1	3	1	1	2	4
	V. Diseases of the Digestive System,	M.	7,644	3,839	773	159	55	35	4,861	117	77	95	90	103	125	135
		F.	6,698	3,141	675	147	59	34	4,056	111	71	63	93	140	133	162
99	Diseases of the mouth and annexa,	M.	32	16	4				20	1				2		1
		F.	38	21	2	1			24	3		1	1		2	1
100	Diseases of the pharynx,	M.	84	18	5	3	2	2	36	9	3	3	6	7	2	4
		F.	69	9	3	1	3	5	21	13	8	5	1	3	3	1
101	Diseases of the oesophagus,	M.	13		1	1			2							
		F.	10											1	1	
102	Ulcer of the stomach,	M.	159				2		2	2		1	5	6	11	20
		F.	132	2			1		3				6	5	12	9
103	Other diseases of the stomach (cancer excepted).	M.	574	246	19	5	4	6	250	5	4	5	2	11	10	13
		F.	584	187	21	10	3	2	223	10	1	10	8	10	7	9
104	Diarrhoea and enteritis,	M.	4,170	3,442	728				4,170							
		F.	3,433	2,811	622				3,433							
105	Diarrhoea and enteritis (2 years and over).	M.	512			129	40	18	187	32	9	5	6	13	12	15
		F.	535			120	35	14	169	30	6	4	7	10	9	9
106	Ankylostomiasis,	M.														
		F.														
107	Intestinal parasites,	M.	4		1	1			2	2						
		F.	7		3		1		4	1		1				
108	Appendicitis and typhlitis,	M.	147	3	2	4	2	6	17	32	43	53	46	48	38	37
		F.	352	2	4	2	7	3	18	40	47	29	38	32	24	30
109	Hernia, intestinal obstruction,	M.	456	91	10	5	2	1	109	12	4	14	6	15	16	13
		F.	489	69	6	4	4	4	87	7	4	6	5	16	21	21
	Hernia,	M.	162	21				1	22	1	1	3	1	2	3	5
		F.	177	8	2		3		13				1	1	5	6
	Intestinal obstruction,	M.	294	70	10	5	2		87	11	3	11	5	13	13	8
		F.	312	61	4	4	1	4	74	7	4	6	4	15	16	15
110	Other diseases of the intestines,	M.	95	13	2	2	1	1	19	2	4	2	2	6	5	1
		F.	103	12	5	1	2	1	21	1			2	8	5	6

MORTALITY TABLE 2—Continued.

	Registration Area.		Age.												
			All Ages	Under 1	1	2	3	4	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39
111	Acute yellow atrophy of the liver,	M.	10	2					2	1			2	1		
		F.	23	2	1			2	5	1			1	1	2	4
112	Hydatid tumor of the liver,	M.	2												1	1
		F.	2							1						
113	Cirrhosis of the liver,	M.	702	3		1			4	1	2	2	4	16	22	24
		F.	365	2		1			3	1	2		5	6	6	19
114	Biliary calculi,	M.	61	1					1				1	2		3
		F.	192											2	6	10
115	Other diseases of the liver,	M.	194	15		3	1	1	20	5		3	7	5	9	12
		F.	244	18	4	2	2		26	3	5		6	4	14	12
116	Diseases of the spleen,	M.	7			1			1		1		2	1		
		F.	4							1			1			1
117	Simple peritonitis (nonpuerperal),	M.	86	19	1	4			24	7	1	6	3	4	4	6
		F.	89	6	4	4	1	3	18	4	4	7	6	4	10	3
118	Other diseases of the digestive system (cancer and tuberculosis excepted).	M.	33				1		1			1	1	3	3	2
		F.	28			1			1	1			3	1	3	
	VI. Nonvenereal Diseases of the Genitourinary System and Annexa.	M.	5,187	71	23	13	20	9	136	56	42	39	58	99	136	180
		F.	4,639	43	20	15	11	14	103	37	36	71	106	146	166	270
119	Acute nephritis,	M.	420	32	13	8	10	6	69	26	11	10	16	23	21	31
		F.	373	16	13	9	8	8	54	18	12	17	25	21	22	27
120	Bright's disease,	M.	4,186	21	10	5	8	3	47	27	30	28	39	68	104	137
		F.	3,713	15	5	3	2	6	31	19	19	42	50	67	88	165
121	Chyluria,	M.														
		F.														

122	Other diseases of the kidneys and annexa.	M.	87	9			1		10		1		3	4	5	2
		F.	71	6	1	3	1		11			3	2	3	3	10
123	Calculi of the urinary passages,	M.	35				1		1					1	4	2
		F.	19												3	4
124	Diseases of the bladder,	M.	126	4					4	2						4
		F.	36	2					2					2		
125	Diseases of the urethra, urinary abscess, etc.	M.	34	1					1					3	1	2
		F.	1												1	
126	Diseases of the prostate,	M.	289									1			1	2
		F.														
127	Nonvenereal diseases of the genital organs.	M.	9	3					3	1						
		F.														
128	Uterine haemorrhage (nonpuerperal),	M.														
		F.	7								1	2		1		1
129	Uterine tumor (noncancerous),	M.														
		F.	147											6	10	17
130	Other diseases of the uterus,	M.														
		F.	75	1					1		2	1	13	13	11	16
131	Cysts and other tumors of the ovary,	M.														
		F.	65									1	1	9	8	8
132	Salpingitis and other diseases of the female genital organs.	M.														
		F.	124	1	1				2		2	5	14	23	19	22
133	Nonpuerperal diseases of the breast (cancer excepted).	M.	1	1					1							
		F.	8	2					2				1	1	1	
	VII. The Puerperal State,	M.														
		F.	1,401								1	127	298	304	297	252
134	Accidents of pregnancy,	M.														
		F.	113									5	24	30	27	23
135	Puerperal haemorrhage,	M.														
		F.	123									1	11	23	27	46
136	Other accidents of labor,	M.														
		F.	130									5	25	34	33	18
137	Puerperal septichaemia,	M.														
		F.	587									54	135	129	131	95

MORTALITY TABLE 2—Continued.

	Registration Area.		Age.													
			All Ages	Under 1	1	2	3	4	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39
138	Puerperal albuminuria and convulsions,	M.														
		F.	398								1	58	95	73	69	61
139	Puerperal phlegmasca alba dolens, embolus, sudden death.	M.														
		F.	42									3	7	11	10	7
140	Following childbirth (not otherwise defined).	M.														
		F.	4											3		1
141	Puerperal diseases of the breast,	M.														
		F.	4									1	1	1		1
	VIII. Diseases of the Skin and of the Cellular Tissue.	M.	278	69		2			71	3	2	3	5	3	3	9
		F.	242	59	5	5	2	2	73	2	4	3		3	3	5
142	Gangrene,	M.	121	2		1			3	1	1				1	2
		F.	119		1	2	1	1	5	1				1	3	2
143	Furuncle,	M.	52	11					11	1		1	2	1	1	4
		F.	22	6			1		7			1		1		1
144	Acute abscess,	M.	55	17		1			18	1	1	2	3	2	1	2
		F.	53	27	2	2		1	32		4	2		1		2
145	Other diseases of the skin and annexa,	M.	50	39					39							1
		F.	48	26	2	1			29	1						
	IX. Diseases of the Bones and of the Organs of Locomotion.	M.	157	17	12	5	3	4	41	18	11	12	5	7	6	8
		F.	98	14	2	1	3	3	23	10	5	6	4	3	4	4
146	Diseases of the bones (tuberculosis excepted).	M.	137	15	11	5	3	4	38	18	11	11	3	7	4	7
		F.	87	14	2	1	3	3	23	19	4	6	4	3	4	4
147	Diseases of the joints (tuberculosis and rheumatism excepted).	M.	13	2	1				3			1	2		1	1
		F.	9								1					

148	Amputations,	M.															
		F.															
149	Other diseases of the organs of locomotion.	M.	7													1	
		F.	2														
	X. Malformations,	M.	943	910	12	4	1	1	928	4	4	6				1	
		F.	707	669	14	7	1	2	693	10	1	1	1				1
150	Congenital malformations (stillbirths not included).	M.	943	910	12	4	1	1	928	4	4	6				1	
		F.	707	669	14	7	1	2	693	10	1	1	1				1
	Hydrocephalus,	M.	52	42	1	2	1	1	47	1	1	3					
		F.	51	42	2	3			47	3		1					
	Congenital malformations of the heart.	M.	656	642	7	1			650	1	3	1				1	
		F.	471	452	10	1		2	465	4	1						1
	Other congenital malformations,	M.	235	226	4	1			231	2		2					
		F.	185	175	2	3	1		181	3			1				
	XI. Early Infancy,	M.	4,329	4,329					4,329								
		F.	3,241	3,241					3,241								
151	Congenital debility, icterus and sclerema,	M.	3,467	3,467					3,467								
		F.	2,641	2,641					2,641								
	Premature birth,	M.	2,312	2,312					2,312								
		F.	1,826	1,826					1,826								
	Congenital debility, "atrophy," "marasmus," etc.	M.	1,155	1,155					1,155								
		F.	815	815					815								
152	Other causes peculiar to early infancy,	M.	848	848					848								
		F.	590	590					590								
	Injuries at birth,	M.	489	489					489								
		F.	308	308					308								
	Other diseases peculiar to early infancy.	M.	359	359					359								
		F.	282	282					282								
153	Lack of care,	M.	14	14					14								
		F.	10	10					10								
	XII. Old Age,	M.	486														
		F.	742														
154	Senility,	M.	486														
		F.	742														

MORTALITY TABLE 2—Continued.

	Registration Area.		Age.												
			All Ages	Under 1	1	2	3	4	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39
	XIII. External Causes,	M.	6,833	135	121	128	88	75	547	264	234	392	670	676	618	700
		F.	2,014	108	98	97	75	46	424	152	47	86	97	91	90	89
	Suicide (total),	M.	811								4	21	59	69	71	86
		F.	270								4	28	28	36	30	36
155	Suicide by poison,	M.	131									2	9	13	13	18
		F.	114								1	22	17	19	16	11
156	Suicide by asphyxia,	M.	79									1	6	4	5	5
		F.	45								1	2	2	5	5	5
157	Suicide by hanging or strangulation,	M.	165								1	1	10	8	9	19
		F.	34								1		3	4	2	3
158	Suicide by drowning,	M.	28										1	3	1	4
		F.	20									1	2	1	1	7
159	Suicide by firearms,	M.	341								2	16	31	39	32	35
		F.	32								1	3	2	5	4	6
160	Suicide by cutting or piercing instruments.	M.	47										1	1	6	2
		F.	8										1	1		3
161	Suicide by jumping from high places,	M.	12								1	1	1		2	2
		F.	8										1		1	
162	Suicide by crushing,	M.	5												2	
		F.	1													
163	Other suicides,	M.	3											1	1	1
		F.	8											1	1	1
	Accidental or undefined (total),	M.	5,713	123	120	127	88	72	530	262	226	358	564	561	509	563
		F.	1,651	103	96	95	75	46	415	150	42	51	55	36	50	43

164	Poisoning by food,	M.	32	7	2	2	2	1	14	4		1	1	2	1	
		F.	24	4	2		1		7	4	2	2	1	1		
165	Other acute poisonings,	M.	88	12	18	6	3	3	42	7	1		9	2	2	3
		F.	62	8	9	10	3		30	3		5	5	1	4	6
166	Conflagration,	M.	86	2		5	3	2	12	4	2	5	5	11	11	8
		F.	40	4	2	1	2		9	3	1	6	7	1		2
167	Burns (conflagration excepted),	M.	366	22	57	77	45	28	229	23	3	12	14	11	10	15
		F.	435	18	46	59	49	37	209	64	12	9	18	9	13	10
168	Absorption of deleterious gases (conflagration excepted).	M.	124	28	1	1	1	1	32	5	1	3	5	8	4	14
		F.	57	32			1		33	1		2	1	1	2	1
169	Accidental drowning,	M.	475	4	12	6	6	14	42	45	47	55	72	37	24	43
		F.	59	1	12	2	2		17	2	8	3	8	2	1	4
170	Traumatism by firearms,	M.	99	1	1	2		1	5	7	19	25	8	10	7	5
		F.	13	1	1	2	1		5	1	1	3		1	2	
171	Traumatism by cutting or piercing instruments.	M.	4													1
		F.	2													
172	Traumatism by fall,	M.	787	10	11	12	6	2	41	27	13	24	29	40	52	54
		F.	581	9	8	6	3	1	27	12	4	1	3	5	5	4
173	Traumatism in mines and quarries,	M.	1,138			1			1		3	78	156	196	158	155
		F.	5							1		2		1		1
	Traumatism in mines,	M.	1,105			1			1		3	78	150	192	151	150
		F.	4							1		1		1		1
	Traumatism in quarries,	M.	33										6	4	7	5
		F.	1									1				
174	Traumatism by machines,	M.	185				1		1		4	19	26	26	22	19
		F.	4							1					1	
175	Traumatism by other crushing,	M.	1,846	2	8	11	17	15	53	117	106	114	203	180	172	196
		F.	263	1	5	10	12	6	34	50	12	17	7	13	19	11
	Railroad accidents and injuries,	M.	1,075		4		2		6	29	41	63	146	129	126	135
		F.	78		1	3	2		6	9	6	8	3	2	7	3
	Street car accidents and injuries,	M.	157		3	2	3	7	15	16	10	10	12	10	12	13
		F.	30			1	1		2	6			1	3	1	1
	Automobile accidents and injuries,	M.	360	1		2	8	7	18	52	42	23	25	18	24	30
		F.	105		2	1	4	3	10	28	4	8	1	8	5	6

MORTALITY TABLE 2—Continued.

	Registration Area.		Age.												
			All Ages	Under 1	1	2	3	4	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39
	Injuries by other vehicles,	M.	219	1	1	7	4	1	14	18	11	16	16	18	6	14
		F.	47		2	5	5	3	15	7	2	1	2		6	1
	Landslide, other crushing,	M.	35							2	2	2	4	5	4	4
		F.	2	1					1							
176	Injuries by animals,	M.	53			2	1		3	7	4	3	4	1	6	4
		F.	2													1
177	Starvation,	M.	3							1						1
		F.	2	1					1							
178	Excessive cold,	M.	35	2					2				1	2	2	6
		F.	11	3			1		4	2					1	1
179	Effects of heat,	M.	66	23	3				26	2	1		2	6	1	4
		F.	34	7	1	2		1	11	1					1	
180	Lightning,	M.	13								1	2	1	1	2	
		F.	3							1			1			
181	Electricity (lightning excepted),	M.	55							4	8	6	11	8	6	7
		F.	1								1					
185	Fractures (cause not specified),	M.	6										1		1	2
		F.	1					1	1							
186	Other external violence,	M.	252	10	7	2	3	5	27	9	13	11	16	20	28	29
		F.	52	14	10	3			27	4	1	1	4	1	1	2
	Homicide (total),	M.	369	12	1	1		3	17	2	4	13	47	46	38	48
		F.	93	5	2	2			9	2	1	7	14	19	10	10
182	Homicide by firearms,	M.	172			1		1	2	1	2	9	34	24	28	31
		F.	47			1			1	1	1	6	5	10	5	7

183	Homicide by cutting or piercing instruments.	M.	46							1		2	9	13	7	3
		F.	9		1				1				1	1	2	1
184	Homicide by other means,	M.	91	12	1			2	15		2	2	4	9	3	14
		F.	37	5	1	1			7	1		1	8	8	3	2
	XIV. Ill-Defined Diseases,	M.	434	104	42	13	2	4	165	3	2	5	5	9	6	17
		F.	270	62	60	7	3		132	2	1	2	2	7	1	5
187	Ill defined organic diseases,	M.	19	1					1							
		F.	14			1			1	1						
188	Sudden death,	M.	57	21	3				24			1	1	1		2
		F.	36	9	2	1			12		1	1		2		1
189	Not specified or ill defined,	M.	358	82	39	13	2	4	146	3	2	1	4	8	6	15
		F.	220	53	58	5	3		119	1		1	2	5	1	4
	Ill defined,	M.	275	45	35	13	2	4	99	3	2	2	4	4	3	10
		F.	175	27	57	5	3		92	1		1	1	5		4
	Not specified or unknown,	M.	83	37	4				41			2		4	3	5
		F.	45	26	1				27				1		1	

MORTALITY TABLE 2—Continued.

	Registration Area.		Age.													
			40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 to 89	90 to 94	95 to 99	100 and over	Unknown
	All Causes,	M.	2,836	3,082	3,292	3,563	3,877	4,099	3,952	3,240	2,155	1,027	297	50	8	4
		F.	2,038	2,178	2,427	2,770	3,153	3,677	4,128	3,687	2,682	1,437	490	103	29	1
	I. General Diseases,	M.	949	912	891	888	844	758	573	432	215	87	28			
		F.	780	795	839	902	921	828	833	588	309	142	42	10	2	
1	Typhoid fever,	M.	46	28	26	16	13	13	9		2	1				
		F.	10	23	16	13	13	3	3	4	2					
2	Typhus fever,	M.														
		F.														
3	Relapsing fever,	M.														
		F.														
4	Malaria,	M.	2	3		1		2	1	3						
		F.			1	1	1		1	1						
5	Smallpox,	M.														
		F.														
6	Measles,	M.				1										
		F.	1													
7	Scarlet fever,	M.														
		F.	1		1											
8	Whooping cough,	M.							1							
		F.		1												
9	Diphtheria and croup,	M.	4	1	1	3	3									
		F.	3	4		2	1									
10	Influenza,	M.	15	35	31	39	42	65	61	70	60	29	20			
		F.	15	21	28	48	52	73	102	120	88	57	22	7	1	

11	Miliary fever,	M.														
		F.														
12	Asiatic fever,	M.														
		F.														
13	Cholera nostras,	M.	1	1		3		1		5						
		F.			1	2	1	4	1	5	2	3				
14	Dysentery,	M.		1	2	5	1	3	5	14	5	1				
		F.	2	2	1	2	5	4	13	20	11	5	3		1	
15	Plague,	M.														
		F.														
16	Yellow fever,	M.														
		F.														
17	Leprosy,	M.														
		F.														
18	Erysipelas,	M.	10	5	8	3	7	13	7	9	6	6	2			
		F.	4	7	6	8	9	7	5	5	3	2		1		
19	Other epidemic diseases,	M.									1					
		F.										1				
20	Purulent infection and septichaemia,	M.	6	5	5	12	5	9	5	6	2	4				
		F.	2	2	6	6	6	3	5	4	5					
21	Glanders,	M.														
		F.														
22	Anthrax,	M.			1			1								
		F.														
23	Rabies,	M.														
		F.														
24	Tetanus,	M.	6	6	3	4	3	2								
		F.	1		2	2	2	1								
25	Mycoses,	M.														
		F.					1									
26	Pellagra,	M.														
		F.			1		1		1							
27	Beriberi,	M.														
		F.														

MORTALITY TABLE 2—Continued.

	Registration Area.		Age.													
			40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 to 89	90 to 94	95 to 99	100 and over	Unknown
	Tuberculosis (total),	M.	612	503	421	321	250	179	100	68	24	5				
		F.	355	239	192	163	142	119	101	51	21	8	2			
28	Tuberculosis of the lungs,	M.	569	460	380	296	223	169	93	65	21	5				
		F.	321	197	170	141	124	110	98	48	20	5	2			
29	Acute miliary tuberculosis,	M.	11	17	9	9	8	2	2							
		F.	8	10	5	1	3									
30	Tuberculosis meningitis,	M.	8	7	3		4	1								
		F.	5	4	2	3						1				
31	Abdominal tuberculosis,	M.	12	10	11	6	5	4	5	1	1					
		F.	10	17	11	11	6	4	3	1	1	1				
32	Pott's disease,	M.	4	3	5	3	4	1			1					
		F.	3	4	1	1	1	1		1		1				
33	White swelling,	M.	4	3	1	1					1					
		F.			1	2	2	1								
34	Tuberculosis of other organs,	M.	3	5	3	3	4	2		1						
		F.	4	5	1	3	5	1		1						
35	Disseminated tuberculosis,	M.	1	1	6	3	2									
		F.	4	2	1	1	1	2								
36	Rickets,	M.														
		F.	1													
37	Syphilis,	M.	31	25	13	24	16	4	5	3	2					
		F.	9	13	10	9	6	7	2	1						
38	Gonococcus infection,	M.								1						
		F.	3	3						1						

	Cancer and other malignant tumors (total).	M.	121	169	258	341	359	350	286	192	89	29	5			
		F.	292	384	442	471	495	440	457	290	136	58	12	1		
39	Cancer of the buccal cavity,	M.	5	10	18	27	35	35	22	21	8	1	2			
		F.	3	2	4	6	6	11	9	8	5	1				
40	Cancer of the stomach, liver,	M.	71	91	134	183	194	187	151	86	29	8	1			
		F.	61	96	137	175	195	183	208	122	45	17	3	1		
41	Cancer of the peritonaeum, intestines, rectum.	M.	16	24	31	43	39	42	40	21	10	5				
		F.	31	33	54	50	61	62	59	47	18	7	2			
42	Cancer of the female genital organs,	M.														
		F.	115	141	140	123	105	87	57	42	16	5	2			
43	Cancer of the breast,	M.	1	1	1		2	1	1	1						
		F.	54	76	71	81	74	59	66	26	24	13				
44	Cancer of the skin,	M.	4	4	8	16	23	17	12	16	16	9	1			
		F.	2	5	3	3	12	7	16	22	14	7	4			
45	Cancer of other organs and of organs not specified.	M.	24	37	66	70	65	76	60	47	26	6	1			
		F.	23	31	31	33	41	30	40	22	12	8	1			
46	Other tumors (tumors of the female genital organs excepted).	M.		2		2	1	2								
		F.			2		1	1	2	1	2					
47	Acute articular rheumatism,	M.	11	12	11	12	16	15	11	10	6	3				
		F.	7	5	7	12	15	14	19	11	10	1	2			
48	Chronic rheumatism and gout,	M.		1	4		4	5	4	6		1				
		F.	1	2	4	9	5	10	8	13	4	1				
49	Scurvy,	M.														
		F.	1	1												
50	Diabetes,	M.	17	43	49	52	83	66	55	33	9	4				
		F.	29	40	77	105	132	108	93	44	17	4				
51	Exopthalmic goitre,	M.	1	1												
		F.	8	13	9	6	3	5	4	2	2					
52	Addison's disease,	M.		3	1	1		1	2							
		F.	1	3	2		3	1		1	1					
53	Luchaemia,	M.	7	9	6	6	3	7	5	2	1					
		F.	8	4	3	4	2	3	1	1						
54	Anaemia, chlorosis,	M.	7	13	14	14	22	17	10	4	4	1				
		F.	16	22	21	28	15	15	13	8	4	1		1		

MORTALITY TABLE 2—Continued.

	Registration Area.		Age.													
			40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 to 89	90 to 94	95 to 99	100 and over	Unknown
55	Other general diseases,	M.	4	1	1	2	1			2		2	1			
		F.		3	2	1	7	6	2	2	1	1				
56	Alcoholism (acute or chronic),	M.	43	39	32	24	14	5	6	4	4	1				
		F.	5	3	1	4	1	1			1					
57	Chronic lead poisoning,	M.	2	5	4	1										
		F.						1								
58	Other chronic occupation poisonings,	M.														
		F.														
59	Other chronic poisonings,	M.	3			3	2									
		F.	5		6	6	3	3	2	4	1					
	II. Diseases of the Nervous System and of the Organs of Special Sense.	M.	200	259	334	445	563	619	738	578	370	169	40	3	1	2
		F.	173	228	298	368	512	641	752	680	460	235	69	7	3	
60	Encephalitis,	M.	3	4		3	1	2	1	1	1					
		F.	1	2	2	1	2	2	1							
61	Meningitis (total),	M.	5	5	2	4	1	1		1						
		F.	3	3	6	4	2	3		1						
	Simple meningitis,	M.	5	5	1	2	1	1		1						
		F.	2	3	5	4	2	3		1						
	Cerebrospinal meningitis (undefined),	M.				2										
		F.			1											
	Cerebrospinal fever,	M.			1											
		F.	1													
62	Locomotor ataxia,	M.	13	15	25	36	23	12	16	4	4					
		F.	9	7	5	8	11	14	12	8	1					

63	Other diseases of the spinal cord,	M.	6	19	16	17	25	27	34	19	16	1	1			
		F.	15	5	14	21	27	26	28	15	12	4	2			
	Acute anterior poliomyelitis,	M.	1	1		1	1		1							
		F.	3	1	1	1	2	1	1							
	Other diseases of the spinal cord,	M.	5	18	16	16	24	27	33	19	16	1	1			
		F.	13	4	13	20	25	25	27	15	12	4	2			
64	Cerebral haemorrhage, apoplexy,	M.	72	113	195	293	428	505	579	464	289	145	29	2		1
		F.	79	147	213	269	410	507	603	549	373	183	54	6	3	
65	Softening of the brain,	M.		2	4	2	12	9	9	16	16	1	1			
		F.			3	1	6	3	8	12	4	3	1			
66	Paralysis without special cause,	M.	4	11	11	22	27	35	54	42	36	13	2	1	1	
		F.	8	6	16	22	29	46	58	46	37	29	8	1		
67	General paralysis of the insane,	M.	60	50	56	43	28	19	23	19	10	5	4			1
		F.	19	19	13	16	9	19	23	22	13	8	2			
68	Other forms of mental alienation,	M.	4	7	4	1	7		10				1			
		F.	11	12	6	7	3	9	4	10	2	5				
69	Epilepsy,	M.	13	10	6	8	5	3	6		1		1			
		F.	11	11	6	7	3	7	5	2	2		1			
70	Convulsions (nonpuerperal),	M.							1							
		F.			1				2		1					
71	Convulsions of infants,	M.														
		F.														
72	Chorea,	M.									1					
		F.				1	1									
73	Neuralgia and neuritis,	M.		1	1	2	2	1		4			1			
		F.	3	2	3	2	1	2	4	5	1	1				
74	Other diseases of the nervous system,	M.	16	14	10	13	2	5	4	4	2	3				
		F.	13	12	9	7	7	3	3	10	12	2	1			
75	Diseases of the eyes and their annexa,	M.			1					2		1				
		F.								1						
76	Diseases of the ears,	M.	4	8	3	1	2		1	2						
		F.	1	2	1	2	1		1	1	2					
	III. Diseases of the Circulatory System.	M.	315	407	542	632	856	1,062	1,058	912	631	294	75	13		
		F.	268	356	424	492	686	867	1,013	952	653	390	110	23	4	1

MORTALITY TABLE 2—Continued.

	Registration Area.		Age.													
			40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 to 89	90 to 94	95 to 99	100 and over	Unknown
77	Pericarditis,	M.	3	1	3	7	7	3	2	1	4					
		F.	1	1	1	1		5	3	3	5	1	2			
78	Acute endocarditis,	M.	31	69	76	66	5	7	7	3	3	3	1			
		F.	43	46	50	61	8	5	8	6	6		1			
79	Organic diseases of the heart,	M.	250	294	389	463	702	873	838	693	444	195	44	7		
		F.	204	283	323	370	596	736	829	767	487	275	72	14	3	1
80	Angina pectoris,	M.	10	20	25	34	54	68	60	46	17	3				
		F.	8	9	20	21	29	40	36	27	14	4	2			
81	Diseases of the arteries, atheroma, aneurysms, etc.	M.	9	13	34	43	63	95	135	155	150	88	28	6		
		F.	3	9	11	20	38	59	118	127	127	102	31	8	1	
82	Embolism and thrombosis,	M.	8	7	12	17	23	16	13	12	9	5	1			
		F.	5	2	12	13	14	13	17	20	13	7	2	1		
83	Diseases of the veins (varices, haemorrhoids, phlebitis, etc.)	M.	1	2		1	1		2	1	2					
		F.	4	4	5	4	1	9	1	1	1					
84	Diseases of the lymphatic system (lymphangitis, etc.)	M.		1	1	1	1				1					
		F.														
85	Haemorrhage; other diseases of the circulatory system.	M.	3		2				1	1	1		1			
		F.		2	2	2			1	1		1				
	IV. Diseases of the Respiratory System.	M.	244	397	442	452	469	470	422	329	219	108	39	8	1	
		F.	196	213	223	286	318	448	516	498	406	211	85	26	4	
86	Diseases of the nasal forsae,	M.	1							1						
		F.			1	1						1				
87	Diseases of the larynx,	M.	1	1	2	1	2	3		2	2					
		F.		2	1	1		1	3		1			1		

88	Diseases of the thyreoid body,	M.	1				1								
		F.	2	2		2	2	2	3	2					
89	Acute bronchitis,	M.	1	7	5	10	10	8	18	16	15	8	2	1	
		F.	2	5		3	13	11	16	27	37	12	16	2	
90	Chronic bronchitis,	M.	8	6	16	19	21	39	34	34	35	17	8	1	
		F.	7	6	6	10	21	48	49	65	49	27	20	6	1
91	Bronchopneumonia,	M.	40	47	51	67	93	90	103	85	62	33	13	3	
		F.	30	38	55	64	76	112	167	170	117	75	24	6	2
92	Pneumonia,	M.	258	281	294	298	268	259	204	155	79	37	9	3	1
		F.	126	136	140	178	180	227	237	187	163	78	20	9	
	Lobar pneumonia,	M.	218	247	250	251	223	215	164	110	58	27	6	3	1
		F.	111	121	116	146	146	184	188	147	119	49	15	7	
	Pneumonia (undefined),	M.	40	34	44	47	45	44	40	45	21	10	3		
		F.	15	15	24	32	34	43	49	40	44	29	5	2	
93	Plurisy,	M.	10	14	12	7	15	7	15	9	1	3	2		
		F.	13	14	5	5	10	17	13	13	12	2	1	1	
94	Pulmonary congestion, pulmonary apoplexy.	M.	3	4	6	4	6	9	14	7	18	7	3		
		F.	3	2		6	3	10	8	13	17	9	2	1	1
95	Gangrene of the lung,	M.	1	3	1	1	1	2		1					
		F.	1		1			1							
96	Asthma,	M.	12	21	20	21	30	34	24	13	5	2	2		
		F.	10	4	11	7	10	11	14	16	8	6	1		
97	Pulmonary emphysema,	M.			3	4	4	4	2	1	1				
		F.		1		1	1	1	2	2					
98	Other diseases of the respiratory system (tuberculosis excepted).	M.	8	13	32	20	18	15	8	5	1	1			
		F.	2	3	3	8	2	7	4	3	2	1	1		
	V. Diseases of the Digestive System,	M.	204	234	229	260	248	247	232	156	110	43	8	4	3
		F.	151	182	195	208	199	234	246	220	174	89	28	6	
99	Diseases of the mouth and annexa,	M.	3		1	1		2	1						
		F.				1		1	1		3				
100	Diseases of the pharynx,	M.	5	4	1	3	3	2		1	1				
		F.		3		1	5	2	2		1				
101	Diseases of the oesophagus,	M.		1	1	1	1	3	3	1					
		F.			3				1	2		2			

MORTALITY TABLE 2—Continued.

	Registration Area.		Age.												
			40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 to 89	90 to 94	95 to 99	100 and over	Unknown
102	Ulcer of the stomach,	M.	14	18	11	20	12	13	10	7	4	2	1			
		F.	8	13	12	10	9	17	10	8	7	2	1			
103	Other diseases of the stomach (cancer excepted).	M.	19	26	26	31	32	39	28	35	27	8	1	1	1	
		F.	16	7	17	28	31	37	44	48	48	21	7	2		
104	Diarrhoea and enteritis,	M.														
		F.														
105	Diarrhoea and enteritis (2 years and over).	M.	18	13	13	21	21	25	52	29	24	10	5	1	1	
		F.	10	11	15	22	22	34	45	49	39	28	14	2		
106	Ankylostomiasis,	M.														
		F.														
107	Intestinal parasites,	M.														
		F.				1										
108	Appendicitis and typhlitis,	M.	29	34	22	23	9	3	5	3	4	1				
		F.	22	21	20	8	6	8	1	3	4		1			
109	Hernia, intestinal obstruction,	M.	30	23	27	31	33	39	27	27	18	10		1	1	
		F.	30	41	33	35	30	40	33	42	25	11	1	1		
	Hernia,	M.	17	12	10	15	19	17	10	12	8	3			1	
		F.	13	16	19	14	11	25	14	24	12	3				
	Intestinal obstruction,	M.	13	11	17	16	14	22	17	15	10	7		1		
		F.	17	25	14	21	19	15	19	18	13	8	1	1		
110	Other diseases of the intestines,	M.	5	6	5	7	8	8	5	2	5	2	1			
		F.	5	8	4	7	5	5	11	5	6	4				
111	Acute yellow atrophy of the liver,	M.		1			2	1								
		F.		2	1	3				1	1	1				

112	Hydatid tumor of the liver,	M.													
		F.								1					
113	Cirrhosis of the liver,	M.	57	72	93	93	100	89	68	33	14	7			
		F.	28	29	43	39	49	44	39	29	15	7	1		
114	Biliary calculi,	M.	8	8	8	6	6	9	9		2	1			
		F.	10	25	23	22	23	22	23	11	11	4			
115	Other diseases of the liver,	M.	14	19	14	14	14	16	20	11	9	1		1	
		F.	15	17	19	23	14	17	27	16	14	8	3	1	
116	Diseases of the spleen,	M.						2							
		F.					1								
117	Simple peritonitis (nonpuerperal),	M.	2	4	5	5	3	3	2	4	2	1			
		F.	2	5	4	4	1	6	6	3		1	1		
118	Other diseases of the digestive system (cancer and tuberculosis excepted).	M.		5	2	4	4	2	2	3					
		F.	5		1	4	3	1	3	2					
	VI. Nonvenereal Diseases of the Genitourinary System and Annexa.	M.	231	305	412	494	568	613	659	584	360	167	41	6	1
		F.	255	306	370	413	403	504	523	436	313	137	34	8	2
119	Acute nephritis,	M.	30	24	25	26	30	14	24	22	9	7	2		
		F.	30	23	29	13	11	23	23	11	10	4			
120	Bright's disease,	M.	188	201	365	434	486	518	545	474	271	129	31	3	1
		F.	161	226	295	369	373	464	484	400	291	127	32	8	2
121	Chyluria,	M.													
		F.													
122	Other diseases of the kidneys and annexa.	M.	3	8	6	6	9	6	10	6	5	1	2		
		F.	4	3	7	3	4	3	1	8	5		1		
123	Calculi of the urinary passages,	M.	3	5	3	5	2	5	2		1	1			
		F.			3	3	2	1	1	2					
124	Diseases of the bladder,	M.	3	3	3	3	6	17	22	22	24	9	3	1	
		F.	1	1	2	1	2	2	7	6	5	5			
125	Diseases of the urethra, urinary abscess, etc.	M.	2	3	2	6	5	4	2	2	1				
		F.													
126	Diseases of the prostate,	M.	2		7	14	29	47	54	58	49	20	3	2	
		F.													
127	Nonvenereal diseases of the genital organs.	M.		1	1		1	2							
		F.													

MORTALITY TABLE 2—Continued.

	Registration Area.		Age.													
			40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 to 89	90 to 94	95 to 99	100 and over	Unknown
128	Uterine haemorrhage (nonpuerperal),	M.														
		F.		1	1											
129	Uterine tumor (noncancerous),	M.														
		F.	28	29	18	14	5	8	3	6	2	1				
130	Other diseases of the uterus,	M.														
		F.	8	3	2	2	1		1	1						
131	Cysts and other tumors of the ovary,	M.														
		F.	8	9	4	6	4	2	3	2						
132	Salpingitis and other diseases of the female genital organs.	M.														
		F.	14	11	8	2	1	1								
133	Nonpuerperal diseases of the breast (cancer excepted).	M.														
		F.	1		1								1			
	VII. The Puerperal State,	M.														
		F.	111	9	2											
134	Accidents of pregnancy,	M.														
		F.	4													
135	Puerperal haemorrhage,	M.														
		F.	14	1												
136	Other accidents of labor,	M.														
		F.	14		1											
137	Puerperal septichaemia,	M.														
		F.	36	6	1											
138	Puerperal albuminuria and convulsions,	M.														
		F.	39	2												

139	Puerperal phlegmasca alba dolens, embolus, sudden death.	M.													
		F.	4												
140	Following childbirth (not otherwise defined).	M.													
		F.													
141	Puerperal diseases of the breast,	M.													
		F.													
	VIII. Diseases of the Skin and of the Cellular Tissue.	M.	9	11	19	17	12	21	27	18	25	14	5	1	
		F.	7	2	5	9	11	15	29	27	25	16	3		
142	Gangrene,	M.	2	5	4	8	7	14	22	13	19	13	5	1	
		F.	1		3	2	8	9	20	25	21	15	3		
143	Furuncle,	M.	4	2	8	5	2	2	3	3	2				
		F.	2		2	2	1	1	2	1	1				
144	Acute abscess,	M.	3	3	6	3	2	2	1	1	3	1			
		F.	2	1		3		4		1	1				
145	Other diseases of the skin and annexa,	M.		1	1	1	1	3	1	1	1				
		F.	2	1		2	2	1	7		2	1			
	IX. Diseases of the Bones and of the Organs of Locomotion.	M.	7	11	6	3	4	8	5	2	3				
		F.	6	4	5	1	5	7	4	3	3	1			
146	Diseases of the bones (tuberculosis excepted).	M.	7	8	6	3	3	4	4	2	1				
		F.	3	3	5	1	5	4	3	3	2				
147	Diseases of the joints (tuberculosis and rheumatism excepted).	M.		2				2			1				
		F.	2	1				2	1		1	1			
148	Amputations,	M.													
		F.													
149	Other diseases of the organs of locomotion.	M.		1			1	2	1		1				
		F.	1					1							
	X. Malformations,	M.													
		F.													
150	Congenital malformations (stillbirths not included).	M.													
		F.													
	Hydrocephalus,	M.													
		F.													
	Congenital malformations of the heart.	M.													
		F.													

MORTALITY TABLE 2—Continued.

	Registration Area.		Age.													
			40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 to 89	90 to 94	95 to 99	100 and over	Unknown
	Other congenital malformations,	M.														
		F.														
	XI. Early Infancy,	M.														
		F.														
151	Congenital debility, icterus and sclerema,	M.														
		F.														
	Premature birth,	M.														
		F.														
	Congenital debility, "atrophy," "marasmus," etc.	M.														
		F.														
152	Other causes peculiar to early infancy,	M.														
		F.														
	Injuries at birth,	M.														
		F.														
	Other diseases peculiar to early infancy.	M.														
		F.														
153	Lack of care,	M.														
		F.														
	XII. Old Age,	M.				4	9	21	40	95	155	95	51	14	2	
		F.			1	5	10	25	77	140	205	160	90	17	12	
154	Senility,	M.				4	9	21	40	95	155	95	51	14	2	
		F.			1	5	10	25	77	140	205	160	90	17	12	
	XIII. External Causes,	M.	568	524	395	342	268	246	63	115	60	40	9			2
		F.	85	76	54	78	76	89	16	133	119	82	23	5	2	

	Suicide (total),	M.	96	94	72	72	57	53	30	16	8	1				2
		F.	21	19	14	21	17	9	5	1	1					
155	Suicide by poison,	M.	19	17	14	10	6	6	4							
		F.	10	5		5	4	2	2							
156	Suicide by asphyxia,	M.	10	13	6	10	6	4	5	3	1					
		F.	1	3	4	6	5	5	1							
157	Suicide by hanging or strangulation,	M.	16	14	18	16	17	16	11	5	4					
		F.	2	2	6	4	3	1	2	1						
158	Suicide by drowning,	M.	3	7	3	2	2	1	1							
		F.	1	1	2	2	2									
159	Suicide by firearms,	M.	37	34	25	30	24	20	7	5	1	1				2
		F.	5	2		3	1									
160	Suicide by cutting or piercing instruments.	M.	10	8	5	3		5	2	3	1					
		F.				1	1	1								
161	Suicide by jumping from high places,	M.		1		1	1	1			1					
		F.		4	1						1					
162	Suicide by crushing,	M.	1		1		1									
		F.	1													
163	Other suicides,	M.														
		F.	1	2	1		1									
	Accidental or undefined (total),	M.	434	410	307	259	207	193	131	97	52	38	9			
		F.	56	54	38	56	58	80	110	130	115	82	23	5	2	
164	Poisoning by food,	M.	3	1	1	3			1							
		F.	1	1			1	1	2	1						
165	Other acute poisonings,	M.	7	4	2	2		4		1	2					
		F.			1	1	2	1	1		2					
166	Conflagration,	M.	3	3	7	6	1	2	2	1	1	2				
		F.	2				1	1		2	4	1				
167	Burns (conflagration excepted),	M.	8	6	5	7	4	6	4	7	1	1				
		F.	13	16	5	9	5	14	7	12	6	3	1			
168	Absorption of deleterious gases (conflagration excepted).	M.	6	14	8	7	6	3	2	4	1	1				
		F.	2	2	2	3	3	2		2						
169	Accidental drowning,	M.	24	21	21	9	14	11	7	2			1			
		F.	5	1	1	3	2	1			1					

MORTALITY TABLE 2—Continued.

	Registration Area.		Age.													
			40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 to 89	90 to 94	95 to 99	100 and over	Unknown
170	Traumatism by firearms,	M.	4	4		3	1	1								
		F.														
171	Traumatism by cutting or piercing instruments.	M.	1					1			1					
		F.		1					1							
172	Traumatism by fall,	M.	51	52	53	53	57	62	55	48	39	30	7			
		F.	12	15	15	18	25	44	82	97	96	77	22	5	2	
173	Traumatism in mines and quarries,	M.	127	117	69	44	23	10	1							
		F.														
	Traumatism in mines,	M.	122	116	67	44	21	9	1							
		F.														
	Traumatism in quarries,	M.	5	1	2		2	1								
		F.														
174	Traumatism by machines,	M.	19	13	15	8	3	6	3	1						
		F.	1		1											
175	Traumatism by other crushing,	M.	148	148	101	88	78	63	41	28	4	3				
		F.	18	17	10	18	7	8	11	9	2					
	Railroad accidents and injuries,	M.	97	94	60	51	42	27	17	8	1	3				
		F.	8	7	2	6	1	4	3	3						
	Street car accidents and injuries,	M.	8	12	8	11	6	5	4	4	1					
		F.	4	1	2	5	2		1	1						
	Automobile accidents and injuries,	M.	24	28	17	10	17	13	8	10	1					
		F.	3	9	5	4	4		5	5	1					
	Injuries by other vehicles,	M.	15	12	15	14	11	20	12	6	1					
		F.	3			3		4	2		1					

	Landslide, other crushing,	M.	4	2	1	2	2	1								
		F.			1											
176	Injuries by animals,	M.	2	2	1	2	5	3	4	2						
		F.	1													
177	Starvation,	M.							1							
		F.						1								
178	Excessive cold,	M.	2	5	4	3	2	4	2							
		F.			1	1				1						
179	Effects of heat,	M.	1	1	4	2	3	5	3	1	2	1	1			
		F.	1			2		4	5	5	3	1				
180	Lightning,	M.	1		1	4										
		F.			1											
181	Electricity (lightning excepted),	M.	3		2											
		F.														
185	Fractures (cause not specified),	M.		1	1											
		F.														
186	Other external violence,	M.	24	18	12	18	10	9	5	2	1					
		F.		1	1	1	2	3	1	1	1					
	Homicide (total),	M.	38	20	16	11	4		2	2		1				
		F.	8	3	2	1	1		1	2	3					
182	Homicide by firearms,	M.	21	9	3	6	1		1							
		F.	4	3	1					1	2					
183	Homicide by cutting or piercing instruments.	M.	3	5	2	1										
		F.	3													
184	Homicide by other means,	M.	14	6	11	4	3		1	2		1				
		F.	1		1	1	1		1	1	1					
	XIV. Ill-Defined Diseases,	M.	9	22	22	26	36	34	35	19	7	10	1	1		
		F.	6	7	11	8	12	19	19	10	15	4	6	1		
187	Ill defined organic diseases,	M.			1	2	3	1	3	2	3	3				
		F.	1		2			1	3	1	1	2	1			
188	Sudden death,	M.	2	3	3	3	4	4	7		1	1				
		F.	2			2	1	2	5	2	4		1			
189	Not specified or ill defined,	M.	7	19	18	21	29	29	25	17	3	6	1	1		
		F.	3	7	9	6	11	16	11	7	10	2	4	1		

MORTALITY TABLE 2—Continued.

Registration Area.		Age.													
		40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 to 89	90 to 94	95 to 99	100 and over	Unknown
Ill defined,	M.	5	15	15	18	27	24	22	15	3	2	1	1	------	------
	F.	2	6	7	4	9	15	9	4	8	2	4	1	------	------
Not specified or unknown,	M.	2	4	3	3	2	5	3	2	------	4	------	------	------	------
	F.	1	1	2	2	2	1	3	3	2	------	------	------	------	------

MORTALITY TABLE 3.

Deaths in the entire State and in each municipality having more than 10,000 population, and for the rural sections of each county, including municipalities having less than 10,000 population, by ages of decendents, and in certain municipalities by color. (Stillbirths excluded.)

Registration Area.	Age.													
	All Ages	Under 1	1	2	3	4	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39
Entire State,	115,284	23,933	4,353	1,777	1,026	762	31,851	2,412	1,521	2,563	3,636	4,048	4,115	4,826
White,	110,596	23,127	4,137	1,700	983	746	30,693	2,320	1,430	2,404	3,421	3,770	3,827	4,461
Colored,	4,688	806	216	77	43	16	1,158	92	91	159	215	278	288	365
Total cities (of 10,000 poulation and over),	59,954	11,479	2,276	888	542	406	15,591	1,289	799	1,394	2,030	2,360	2,367	2,881
White,	56,354	10,859	2,101	826	505	392	14,683	1,209	735	1,275	1,871	2,147	2,137	2,581
Colored,	3,600	620	175	62	37	14	908	80	64	119	159	213	230	300
Total rural (including all municipalities having less than 10,000 population),	55,330	12,454	2,077	889	484	356	16,260	1,123	722	1,169	1,606	1,688	1,748	1,945
White,	54,242	12,268	2,036	874	478	354	16,010	1,111	695	1,129	1,550	1,623	1,690	1,880
Colored,	1,088	186	41	15	6	2	250	12	27	40	56	65	58	65
Allentown,	994	235	25	11	7	5	283	18	11	19	32	33	36	38
Altoona,	709	133	21	12	12	3	181	15	10	20	29	28	23	38
Beaver Falls,	179	35	9	1	3	1	49	5	3	3	6	12	2	10
Bethlehem,	158	27	2	4	3	-------	36	5	-------	5	5	4	5	5
Braddock,	387	134	32	11	3	8	188	8	6	7	16	18	17	23
Bradford,	231	27	4	2	2	1	36	3	2	5	4	6	6	5
Butler,	255	57	3	1	2	5	68	4	4	9	10	9	10	12
Carbondale,	283	55	8	8	2	1	74	3	4	10	17	21	9	10
Carlisle (total),	152	17	3	-------	1	-------	21	1	5	4	4	1	2	2
White,	125	14	2	-------	1	-------	17	-------	2	2	3	1	1	2
Colored,	27	3	1	-------	-------	-------	4	1	3	2	1	-------	1	-------

MORTALITY TABLE 3—Continued.

Registration Area.	Age.													
	All Ages	Under 1	1	2	3	4	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39
Carnegie,	138	56	7	2	1	1	67	4	3	1	5	7	4	2
Chambersburg (total),	175	19	3	2	3	1	28	2	2	6	4	7	5	6
White,	161	17	2	2	2	1	24	2	1	5	4	7	5	4
Colored,	14	2	1	-------	1	-------	4	-------	1	1	-------	-------	-------	2
Chester (total),	658	134	36	8	6	4	188	16	13	16	22	33	22	36
White,	529	114	21	7	5	4	151	12	8	12	18	26	16	25
Colored,	129	20	15	1	1	-------	37	4	5	4	4	7	6	11
Coatesville (total),	131	44	7	2	-------	1	54	4	-------	1	5	3	1	5
White,	112	36	6	2	-------	1	45	3	-------	1	3	2	1	3
Colored,	19	8	1	-------	-------	-------	9	1	-------	-------	2	1	-------	2
Columbia,	157	20	6	4	-------	-------	30	3	2	3	1	4	4	8
Connellsville,	179	38	6	2	1	3	50	7	7	7	8	8	7	8
DuBois,	128	34	3	1	1	1	40	4	2	4	4	7	8	5
Dunmore,	359	135	27	11	5	6	184	8	1	3	6	3	9	8
Duquesne,	193	82	20	6	2	3	113	3	2	4	5	13	9	6
Easton,	472	72	8	3	3	3	89	9	4	11	23	22	17	16
Erie,	1,107	178	29	10	7	4	228	14	14	32	33	36	37	48
Farrell,	142	55	9	6	1	1	72	9	-------	5	9	7	7	7
Greensburg,	209	26	5	3	3	-------	37	9	4	6	11	12	17	15
Harrisburg (total),	1,004	137	22	14	5	2	180	17	17	29	25	42	44	52
White,	885	121	18	10	4	2	155	15	15	22	21	36	38	41
Colored,	119	16	4	4	1	-------	25	2	2	7	4	6	6	11

Hazleton,	523	128	24	7	6	15	180	27	14	19	16	17	14	24
Homestead,	235	107	22	9	4	2	144	3	5	1	4	7	4	8
Johnstown,	937	253	46	22	9	9	339	23	15	24	45	46	41	49
Lancaster,	809	114	12	10	2	7	145	19	9	18	20	26	25	25
Lebanon,	326	60	7	2	2	1	72	2	8	6	6	19	9	12
McKees Rocks,	198	79	18	4	2	1	104	11	1	2	6	10	7	8
McKeesport,	634	155	29	12	14	4	214	9	10	21	32	34	30	30
Mahanoy City,	229	79	18	4	6	2	109	7	3	5	9	6	5	8
Meadville,	222	25	3	2	-------	1	31	4	3	4	8	8	8	10
Monessen,	169	75	20	8	3	2	108	11	1	2	6	7	1	7
Mount Carmel,	197	71	12	5	-------	1	89	3	4	5	5	4	11	10
Nanticoke,	284	104	21	4	4	1	134	7	2	6	19	9	14	7
New Castle,	513	107	18	15	6	4	150	18	10	11	16	24	17	18
Norristown,	639	80	10	6	3	2	101	13	5	14	13	28	21	34
North Braddock,	162	55	13	3	5	-------	76	8	1	3	5	4	4	5
Oil City,	216	35	9	1	1	1	47	3	3	10	5	4	8	7
Old Forge,	151	64	18	3	3	2	90	5	1	4	2	6	5	5
Philadelphia (total),	25,291	4,233	919	376	215	146	5,889	494	309	550	842	981	1,611	1,328
White,	24,021	3,861	810	333	193	138	5,335	454	275	478	730	831	856	1,124
Colored,	2,270	372	109	43	22	8	554	40	34	72	112	150	155	204
Phoenixville,	192	45	10	5	2	-------	62	5	3	2	5	5	9	10
Pittsburgh (total),	8,728	1,765	396	146	86	82	2,475	240	132	214	342	386	421	455
White,	8,197	1,670	370	141	77	79	2,337	216	122	200	318	357	385	422
Colored,	531	95	26	5	9	3	138	24	10	14	24	29	36	33
Pittston,	297	74	12	5	6	2	99	7	4	3	13	10	14	12
Plymouth,	175	57	8	3	4	2	74	1	1	1	7	4	4	12
Pottstown,	231	30	10	1	3	2	46	5	6	3	8	9	5	8
Pottsville,	402	65	11	6	2	2	86	12	5	13	20	20	27	16
Reading,	1,455	263	48	14	11	12	348	28	23	34	47	61	62	68
Scranton,	2,114	474	91	37	23	12	637	57	33	59	70	89	78	95
Shamokin,	244	79	8	4	5	3	99	3	3	7	6	3	11	9
Sharon,	252	53	9	3	2	4	71	5	5	9	9	8	14	14
Shenandoah,	392	184	32	7	3	3	229	2	3	7	8	7	15	18
South Bethlehem,	300	127	18	7	3	1	156	-------	3	6	8	16	10	12
Steelton (total),	156	47	12	2	2	3	66	3	3	3	3	3	5	4
White,	139	42	11	2	2	3	60	3	3	3	3	3	2	3
Colored,	17	5	1	-------	-------	-------	6	-------	-------	-------	-------	-------	3	1

MORTALITY TABLE 3—Continued.

Registration Area.	Age.													
	All Ages	Under 1	1	2	3	4	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39
Sunbury,	176	26	4	1	2	1	34	7	2	4	3	4	4	9
Uniontown (total),	266	40	7	2	2	2	53	8	3	7	16	13	15	22
White,	227	33	5	2	2	2	44	7	3	7	15	10	13	16
Colored,	39	7	2				9	1			1	3	2	6
Warren,	159	13	2		1	1	17	6	1	5	5	8	8	3
Washington (total),	294	55	9	2	3	1	70	6	6	11	8	16	18	11
White,	244	50	9	1	3	1	64	6	6	8	7	16	15	9
Colored,	50	5		1			6			3	1		3	2
West Chester (total),	271	40	6	3	2	1	52	3	4	6	6	5	5	10
White,	205	23	4	1	2	1	31	2	2	2	5	5	4	7
Colored,	66	17	2	2			21	1	2	4	1		1	3
Wilkes-Barre,	1,215	264	43	16	11	9	343	23	18	40	58	64	59	70
Wilkinsburg,	285	34	6	2	3	3	48	6	2	11	16	15	16	15
Williamsport,	555	87	9	4	3	3	106	11	7	17	12	20	19	19
York,	630	83	11	1	5	2	102	13	12	17	17	24	18	29
Rural (Including all Municipalites Over 10,000 Population).														
Adams,	415	54	8	1	3	2	68	6	2	6	10	6	11	7
Allegheny,	4,738	1,104	206	73	50	41	1,474	125	77	87	155	186	296	212
Armstrong,	863	232	34	15	6	8	295	10	17	22	15	24	25	32
Beaver,	1,049	270	53	18	11	5	357	27	12	23	35	61	59	50
Bedford,	424	84	8	4	1	4	101	7	4	6	8	10	15	9
Berks,	1,511	236	32	11	9	7	295	23	13	49	73	79	78	81
Blair,	755	171	28	4	7	3	213	16	17	12	20	22	19	28
Bradford,	895	102	7	6	3	3	121	9	16	15	17	18	23	33

Bucks,	1,068	159	28	9	6	5	207	12	5	19	30	26	20	31
Butler,	543	102	19	11	8	3	143	8	8	10	4	13	10	17
Cambria,	1,538	527	78	52	26	13	696	48	27	25	54	76	47	74
Cameron,	75	7	1	1	1	-------	10	1	1	1	3	6	3	-------
Carbon,	838	221	43	20	10	8	302	17	21	15	34	24	37	26
Centre,	590	130	19	12	8	6	175	11	15	10	8	15	13	18
Chester,	1,099	175	34	14	7	2	232	18	13	17	24	26	19	34
Clarion,	405	71	11	6	2	1	91	9	4	11	12	7	8	10
Clearfield,	944	265	44	21	15	6	351	21	16	19	17	19	27	21
Clinton,	440	77	11	3	2	1	94	7	7	7	18	12	15	11
Columbia,	557	112	23	3	2	4	144	11	7	16	13	18	16	9
Crawford,	746	77	6	5	2	1	91	14	6	18	12	10	19	23
Cumberland,	577	77	7	7	6	2	99	11	5	6	12	9	11	10
Dauphin,	886	150	20	9	6	1	186	15	8	9	16	22	41	39
Delaware,	1,102	185	31	10	2	7	235	13	12	27	33	36	32	38
Elk,	343	72	16	-------	6	3	97	12	5	6	16	11	11	10
Erie,	631	61	7	5	6	5	84	9	5	12	12	16	17	19
Fayette,	1,793	704	129	38	14	15	900	34	24	38	36	55	49	59
Forest,	80	11	1	-------	-------	-------	12	2	-------	2	1	6	4	4
Franklin,	760	111	19	6	3	-------	139	15	9	29	29	30	36	38
Fulton,	127	21	3	1	2	1	28	5	1	2	1	1	6	1
Greene,	366	61	10	3	4	1	79	5	6	5	7	10	11	9
Huntingdon,	536	119	12	9	7	2	149	15	8	18	18	13	14	7
Indiana,	900	262	37	15	8	7	329	23	11	20	25	23	26	31
Jefferson,	731	168	24	14	7	9	222	18	6	22	30	16	23	20
Juniata,	196	29	7	2	1	5	44	4	1	5	5	3	3	5
Lackawanna,	1,465	410	87	41	17	18	573	20	23	43	46	42	47	66
Lancaster,	1,374	216	31	13	11	5	276	27	17	25	40	25	33	34
Lawrence,	411	102	14	9	2	2	129	9	6	6	8	9	11	14
Lebanon,	542	104	13	8	1	1	127	9	8	11	9	18	10	22
Lehigh,	1,124	230	27	18	10	11	296	13	13	39	45	41	37	44
Luzerne,	2,869	908	198	85	37	29	1,257	78	34	53	90	77	99	128
Lycoming,	527	67	9	2	2	2	82	4	4	6	8	13	13	12
McKean,	369	73	6	6	1	3	89	8	6	14	18	9	9	13
Mercer,	719	100	23	8	12	2	145	5	9	13	22	22	21	31
Mifflin,	394	74	10	6	2	1	93	10	8	11	19	16	7	15
Monroe,	291	50	3	1	1	3	58	6	2	2	6	7	10	7
Montgomery,	1,781	283	53	26	12	13	387	27	20	52	58	57	49	65
Montour,	351	20	2	2	1	-------	25	1	1	4	7	21	17	15
Northampton,	1,071	294	44	9	7	2	356	23	9	15	23	27	20	38
Northumberland,	816	234	24	14	4	6	282	20	10	21	22	29	22	28
Perry,	286	35	11	3	1	3	53	8	3	8	4	8	6	8

MORTALITY TABLE 3—Continued.

Registration Area.	Age.													
	All Ages	Under 1	1	2	3	4	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39
Pike,	125	13	2	-------	1	-------	16	1	3	3	3	2	7	7
Potter,	284	36	7	7	1	1	52	2	5	5	7	4	8	5
Schuylkill,	2,489	689	107	59	29	17	901	67	31	55	87	75	92	107
Snyder,	186	36	3	2	1	1	43	4	2	2	-------	2	1	3
Somerset,	981	301	51	14	14	7	387	29	11	21	29	33	39	24
Sullivan,	121	21	5	1	4	1	32	3	-------	1	2	3	3	-------
Susquehanna,	595	88	16	7	4	6	121	9	8	8	15	10	11	13
Tioga,	562	67	14	5	2	2	90	6	12	8	12	12	5	16
Union,	187	21	4	1	1	1	28	1	2	1	4	6	1	4
Venango,	472	48	9	3	1	2	63	12	12	25	27	18	12	17
Warren,	471	52	5	4	1	1	63	3	5	7	11	6	15	18
Washington,	1,768	596	96	41	20	8	761	48	21	28	53	50	68	61
Wayne,	416	51	9	6	2	3	71	6	4	5	9	10	9	9
Westmoreland,	2,559	832	147	65	25	20	1,089	60	32	60	88	86	89	89
Wyoming,	205	24	5	3	2	-------	34	2	2	6	5	8	2	5
York,	968	172	26	12	4	4	218	21	16	22	26	27	21	11

TABLE 3—Continued.

Registration Area.	Age.													
	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 to 89	90 to 94	95 to 99	100 and over	Unknown
Entire State,	4,874	5,260	5,719	6,333	7,030	7,776	8,080	6,927	4,837	2,494	787	153	37	5
White,	4,529	4,961	5,405	6,081	6,813	7,569	7,918	6,826	4,765	2,455	764	147	30	4
Colored,	345	299	314	252	217	207	162	101	72	39	23	6	7	1
Total cities (of 10,000 population and over),	2,992	3,133	3,426	3,555	3,882	3,924	3,815	3,061	2,008	1,033	335	58	18	3
White,	2,717	2,888	3,179	3,367	3,717	3,769	3,710	2,999	1,965	1,012	323	54	14	2
Colored,	275	245	247	188	165	155	105	62	43	21	12	4	4	1
Total rural (including all municipalities having less than 10,000 population),	1,882	2,127	2,293	2,778	3,148	3,852	4,265	3,863	2,829	1,461	452	95	19	2
White,	1,812	2,076	2,226	2,714	3,096	3,800	4,208	3,827	2,800	1,443	441	93	16	2
Colored,	70	51	67	64	52	52	57	39	29	18	11	2	3	
Allentown,	53	54	38	56	64	63	69	65	43	13	7	1		
Altoona,	36	25	29	31	44	54	46	47	30	20	2	1		
Beaver Falls,	9	6	13	8	8	9	13	7	7	5	3	1		
Bethlehem,	4	9	7	7	10	11	15	14	7	9				
Braddock,	18	11	17	13	20	5	12	6	1	1				
Bradford,	7	4	12	15	26	26	31	23	12	6	2			
Butler,	7	14	13	15	19	25	12	15	5	3	1			
Carbondale,	15	15	13	16	13	18	15	14	9	5	2			
Carlisle (total),	10	5	10	4	8	20	21	16	11	4	1	2		
White,	8	4	8	2	8	17	18	16	10	4	1	1		
Colored,	2	1	2	2		3	3		1			1		

MORTALITY TABLE 3—Continued.

Registration Area.	Age.													
	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 to 89	90 to 94	95 to 99	100 and over	Unknown
Carnegie,	3	4	6	4	8	5	5	3	2	3	2			
Chambersburg (total),	3	10	9	13	18	16	19	14	16	1	2			
White,	2	9	8	13	17	16	18	14	9	1	2			
Colored,	1	1	1		1		1		1					
Chester (total),	28	30	38	35	40	39	45	23	23	9	2			
White,	20	22	31	24	36	34	41	20	22	9	2			
Colored,	8	8	7	11	4	5	4	3	1					
Coatesville (total),	4	7	5	7	4	12	8	5	5	1				
White,	3	7	5	6	4	11	7	5	5	1				
Colored,	1			1		1	1							
Columbia,	5	7	9	11	14	10	13	10	15	5	3			
Connellsville,	6	9	6	9	8	9	8	11	8	3				
DuBois,	2	10	4	4	6	10	6	8	1	2	1			
Dunmore,	7	10	13	8	24	23	17	17	7	9	2			
Duquesne,	8	5	2	6	2	7	4	3	1					
Easton,	25	24	25	23	39	33	39	37	21	11	3	1		
Erie,	64	65	59	60	68	74	100	68	59	34	11	2	1	
Farrell,	5	3	2	7	3	2	1	1	1	1	1			
Greensburg,	10	7	12	13	14	9	10	12	6	4	1			
Harrisburg (total),	43	48	60	63	75	84	82	81	38	18	6			
White,	35	41	50	57	69	74	79	77	36	18	6			
Colored,	8	7	10	6	6	10	3	4	2					

Hazleton,	18	25	36	21	24	27	19	20	12	9	1			
Homestead,	9	3	9	4	5	10	5	8	4	2				
Johnstown,	42	48	47	41	36	37	35	41	17	9	1			1
Lancaster,	48	40	45	47	60	56	61	71	46	32	11	1	1	
Lebanon,	12	16	10	23	28	32	14	31	17	8	1			
McKees Rocks,	12	4	5	3	5	7	3	2	7		1			
McKeesport,	23	34	34	34	21	41	26	26	11	3	1			
Mahanoy City,	9	6	7	11	6	10	11	12	1	2	1	1		
Meadville,	13	10	14	12	11	17	23	19	14	11	2			
Monessen,	6	3	5	3	2	2	2	1	1		1			
Mount Carmel,	7	6	6	5	9	10	5	8	6	2			1	1
Nanticoke,	8	10	11	11	17	15	8	3	3					
New Castle,	13	26	26	30	29	28	39	24	20	10	4			
Norristown,	35	40	37	58	49	54	59	54	30	16	7	1		
North Braddock,	5	4	5	13	12	5	7	3	1	1				
Oil City,	5	11	18	10	18	8	27	13	12	7				
Old Forge,	6	8	1	6	3	3	3	2	1					
Philadelphia (total),	1,416	1,493	1,698	1,731	1,905	1,835	1,777	1,408	929	486	172	27	10	
White,	1,234	1,329	1,531	1,622	1,800	1,756	1,714	1,374	907	473	164	26	8	
Colored,	182	164	167	109	105	79	63	34	22	13	8	1	2	
Phoenixville,	3	9	6	8	15	16	11	6	6	7	4			
Pittsburgh (total),	458	469	474	505	566	521	443	324	220	109	25	7	2	
White,	421	432	438	471	485	498	429	315	216	105	23	7		
Colored,	37	37	36	34	21	23	14	9	4	4	2		2	
Pittston,	18	25	16	18	14	12	22	7	3					
Plymouth,	9	7	12	10	11	4	11	3	1	3				
Pottstown,	8	8	9	14	21	21	26	17	14	1	2			
Pottsville,	21	21	26	20	22	33	24	17	11	7	1			
Reading,	67	61	67	87	103	104	114	81	57	29	9	5		
Scranton,	123	122	112	127	132	130	89	72	52	22	13	2		
Shamokin,	11	8	13	11	17	11	18	6	5	3				
Sharon,	13	8	9	3	11	17	15	18	13	5	2	3		
Shenandoah,	10	18	20	11	12	9	14	5	3	1				
South Bethlehem,	11	11	11	6	14	11	9	10	3	3				
Steelton (total),	2	5	5	11	5	11	12	9	4	1	1			
White,	2	3	3	9	5	11	12	8	4	1	1			
Colored,		2	2	2				1						

MORTALITY TABLE 3—Continued.

Registration Area.	Age.													
	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 to 89	90 to 94	95 to 99	100 and over	Unknown
Sunbury,	10	10	8	11	6	15	15	18	8	7			1	
Uniontown (total),	12	10	20	16	11	16	5	11	11	5	2			
White,	10	9	18	12	9	13	13	10	11	5	2			
Colored,	2	1	2	4	2	3	2	1						
Warren,	6	4	11	15	16	12	14	11	8	7	2			
Washington (total),	16	16	18	8	15	18	22	20	12	8	1			
White,	13	15	15	8	15	13	22	19	11	7	1			
Colored,	3	1	3			5		1	1	1				
West Chester (total),	9	16	9	18	16	22	22	31	20	9	6	2		
White,	6	12	8	11	13	18	19	27	19	8	6			
Colored,	3	4	1	7	3	4	3	4	1	1		2		
Wilkes-Barre,	54	54	75	69	76	57	72	40	30	10	3	1	1	
Wilkinsburg,	12	18	17	21	10	18	23	18	11	7	1			
Williamsport,	28	29	35	35	41	51	43	33	26	15	7			1
York,	32	35	37	42	33	51	63	57	36	10	1		1	
Rural (Including all Municipalities Over 10,000 Population).														
Adams,	13	5	17	22	27	50	49	43	40	25	7	1		
Allegheny,	217	229	211	275	269	288	276	207	141	80	17	1	5	
Armstrong,	27	24	24	45	48	52	66	61	43	23	9	1		
Beaver,	33	35	47	35	38	46	54	53	31	17	4	2		
Bedford,	12	11	19	18	30	45	50	38	25	13	3			

Berks,	73	52	71	68	91	109	125	112	71	38	7	2	--------	1
Blair,	30	26	32	39	47	57	59	54	38	17	14	1	--------	--------
Bradford,	25	33	32	67	67	98	93	97	76	39	12	1	1	--------
Bucks,	25	41	41	49	76	105	112	104	90	49	22	4	--------	--------
Butler,	11	14	15	38	29	49	42	52	56	15	9	--------	--------	--------
Cambria,	53	67	59	51	53	50	38	53	45	18	3	1	--------	--------
Cameron,	2	2	10	4	4	9	7	7	1	3	--------	1	--------	--------
Carbon,	36	25	35	34	42	55	56	33	19	20	5	2	--------	--------
Centre,	12	21	13	28	35	44	59	45	45	20	3	--------	--------	--------
Chester,	37	36	42	58	55	88	114	118	106	40	20	2	--------	--------
Clarion,	10	20	13	24	16	36	41	42	28	18	4	1	--------	--------
Clearfield,	34	31	29	42	55	69	61	70	45	13	3	1	--------	--------
Clinton,	12	21	17	31	28	32	41	40	29	17	1	--------	--------	--------
Columbia,	19	20	24	34	36	35	51	60	26	11	7	--------	--------	--------
Crawford,	19	19	26	41	48	74	104	93	75	36	17	1	--------	--------
Cumberland,	20	19	22	33	42	59	80	71	36	17	11	2	2	--------
Dauphin,	42	43	60	46	71	71	69	69	53	20	5	1	--------	--------
Delaware,	42	51	61	77	76	98	88	75	61	29	14	4	--------	--------
Elk,	10	12	13	22	23	31	24	18	13	6	2	1	--------	--------
Erie,	31	28	34	33	66	62	62	72	52	33	13	1	--------	--------
Fayette,	62	53	57	63	58	72	87	75	39	19	10	3	--------	--------
Forest,	1	1	5	2	5	10	5	7	9	3	--------	1	--------	--------
Franklin,	42	41	24	33	39	58	59	61	42	26	4	--------	--------	--------
Fulton,	--------	5	6	4	7	15	13	12	12	5	3	--------	--------	--------
Greene,	7	12	9	22	18	30	34	48	27	21	4	1	1	--------
Huntingdon,	15	22	18	32	32	36	41	50	24	20	3	1	--------	--------
Indiana,	21	24	34	35	35	53	60	57	46	36	16	1	--------	--------
Jefferson,	20	24	36	32	48	55	54	44	38	19	3	1	--------	--------
Juniata,	3	3	6	10	16	24	17	14	22	8	2	1	--------	--------
Lackawanna,	57	68	70	71	78	74	72	54	33	22	5	--------	1	--------
Lancaster,	34	45	44	72	87	108	160	154	101	68	21	3	--------	--------
Lawrence,	13	15	13	17	27	37	33	27	18	13	6	--------	--------	--------
Lebanon,	16	23	21	25	30	52	56	46	43	11	4	1	--------	--------
Lehigh,	32	47	57	54	64	88	83	81	53	29	7	1	--------	--------
Luzerne,	97	137	126	121	118	149	121	90	53	27	8	3	3	--------
Lycoming,	21	16	18	24	47	54	77	52	47	23	2	4	--------	--------
McKean,	18	10	24	23	18	40	22	21	15	9	3	--------	--------	--------
Mercer,	16	29	30	32	46	56	83	77	51	19	8	3	--------	1
Mifflin,	10	12	19	21	28	28	26	33	28	9	1	--------	--------	--------
Monroe,	14	12	23	17	17	17	32	31	15	11	3	1	--------	--------

MORTALITY TABLE 3—Continued.

Registration Area.	Age.													
	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 to 89	90 to 94	95 to 99	100 and over	Unknown
Montgomery,	47	60	82	114	116	133	176	139	111	64	21	3		
Montour,	19	29	34	25	21	34	39	26	21	10	2			
Northampton,	32	33	40	55	75	73	79	72	59	31	8	1	2	
Northumberland,	35	42	40	38	52	51	53	49	27	19	6			
Perry,	11	10	6	18	25	24	29	28	26	6	4	1		
Pike,	3	4	7	7	9	11	10	11	12	6	2	1		
Potter,	8	9	10	19	19	23	33	35	21	15	4			
Schuylkill,	104	129	127	141	118	131	123	94	65	30	7	4	1	
Snyder,	7	4	13	7	14	18	24	21	15	4	2			
Somerset,	35	49	22	39	38	36	55	42	55	25	7	5		
Sullivan,	3	3	6	10	3	11	12	13	10	5	1			
Susquehanna,	13	27	18	31	42	53	78	66	36	22	12	2		
Tioga,	13	18	29	25	52	49	70	69	47	23	6			
Union,	3	5	8	12	12	21	29	18	16	8	7	1		
Venango,	8	16	22	22	26	38	48	41	41	15	6	3		
Warren,	30	24	28	27	33	39	60	46	38	14	4			
Washington,	60	51	58	73	83	97	84	76	50	32	9	4	1	
Wayne,	13	13	16	25	25	38	42	50	38	21	5	7		
Westmoreland,	65	86	81	114	114	118	120	121	88	41	12	5	1	
Wyoming,	4	3	7	12	16	19	34	22	13	17				
York,	25	34	32	40	69	67	111	106	79	38	8	2	1	

MORTALITY TABLE 4.

Deaths in the entire State and for each municipality having more than 10,000 population, and for the rural sections of each county, including all municipalities having less than 10,000 population, from certain specified causes, and for the State and certain cities by color. (Stillbirths excluded.)

Registration Area.	Cause of Death.																
	All causes.*	Typhoid fever.	Malaria.	Smallpox.	Measles.	Scarlet fever.	Whooping cough.	Diphtheria and croup.	Influenza.	Erysipelas.	Tuberculosis of the lungs.†	Tuberculous meningitis.	Other forms of tuberculosis.	Rheumatism.	Cancer.‡	Diabetes.	Meningitis.
Entire State,	115,284	1,034	34	------	565	301	573	1,632	1,463	278	9,271	572	795	567	6,202	1,303	535
White,	110,596	1,010	34	------	545	296	547	1,612	1,415	270	8,392	525	731	550	6,033	1,271	522
Colored,	4,688	24	------	------	20	5	26	20	48	8	879	47	64	17	169	32	13
Total cities (10,000 population and over),	59,954	504	14	------	387	138	212	831	629	137	5,013	378	449	272	3,349	688	260
White,	56,354	487	14	------	367	134	191	814	588	132	4,378	341	397	257	3,214	662	251
Colored,	3,600	17	------	------	20	4	21	17	41	5	635	37	52	15	135	26	9
Total rural (inclusive of municipalities under 10,000),	55,330	530	20	------	178	163	361	801	834	141	4,258	194	346	295	2,853	615	275
White,	54,242	523	20	------	178	162	356	798	827	138	4,014	184	334	293	2,819	609	271
Colored,	1,088	7	------	------	------	1	5	3	7	3	244	10	12	2	34	6	4
Cities (of 10,000 Population and Over).																	
Allentown,	994	22	------	------	5	1	4	7	8	3	66	5	3	4	56	17	4
Altoona,	709	19	------	------	1	2	6	6	7	1	31	1	9	4	37	11	7
Beaver Falls,	179	6	------	------	8	3	------	2	2	------	10	1	2	1	13	1	1
Bethlehem,	158	2	------	------	------	------	------	4	2	------	15	1	------	1	6	1	------
Braddock,	387	1	------	------	11	------	6	5	------	------	22	2	4	3	12	1	3

MORTALITY TABLE 4—Continued.

Registration Area.	Cause of Death.																
	All causes.*	Typhoid fever.	Malaria.	Smallpox.	Measles.	Scarlet fever.	Whooping cough.	Diphtheria and croup.	Influenza.	Erysipelas.	Tuberculosis of the lungs.†	Tuberculous meningitis.	Other forms of tuberculosis.	Rheumatism.	Cancer.‡	Diabetes.	Meningitis.
Bradford,	231	1	1				1	3	4	1	14			4	20	5	
Butler,	255	4					1	3			21		3	1	17		1
Carbondale,	283	5						3	8	1	8	1			6	7	
Carlisle (total),	152	4							5		9			1	10		1
White,	125	3							5		6			1	9		1
Colored,	27	1									3				1		
Carnegie,	138	2			2			2	3		11	2	1	1	2		2
Chambersburg (total),	175	3					2	3			19		3	1	9	2	
White,	161	3					2	3			17		3		9	2	
Colored,	14										2			1			
Chester (total),	658	8			2		3	7	7		83	7	7	1	26	6	2
White,	529	8			1		1	6	5		61	3	6	1	23	5	2
Colored,	129				1		2	1	2		22	4	1		3	1	
Contesville (total),	131	2						3	3	2	19	1			4	1	
White,	112	2						3	3	2	14	1			4	1	
Colored,	19										5						
Columbia,	157	2				1		2	5		14		1	1	9	1	
Connellsville,	179	3					3	2		1	9	3	4	3	7	1	
DuBois,	198	1						3	1	1	5				7	1	
Dunmore,	359	3			13		2	9	6	3	12			2	15	3	1

Duquesne,	193						3	3		1	13		3		5		2	
Easton,	472	8			2			6	1		32	5	1	4	26	9	2	
Erie,	1,107	5	1		1		1	4	7	1	68	4	5	2	64	14	7	
Farrell,	142	3			1	2		5	2		13	1	3		2		5	
Greensburg,	209	9				1		2	3		8	1	4		7	4	3	
Harrisburg (total),	1,004	11			2	1	6	8	5	4	77	3	7	4	67	14	4	
White,	885	10			2	1	6	8	5	4	59	3	6	4	61	12	4	
Colored,	119	1									18		1		6	2		
Hazleton,	523	6			2	7	3	16	1		21		1	2	19	5	5	
Homestead,	235				3		2	4		1	20	3	1		8		2	
Johnstown,	937	21			4		2	17	9	1	60	6	13	3	43	8	3	
Lancaster,	809	3			1		7	7	14	3	69	4	4	4	59	17	1	
Lebanon,	326	4	1		1			3	5	1	15		4	1	11	4	1	
McKees Rock,	198				1			2	3		13	3			2			
McKeesport,	634	15				2	5	14			38	5	4	3	19	7	6	
Mahanoy City,	229	3			2	1	2	17	1	2	6		3		7	1		
Meadville,	222							2	5		4		1		18	4	2	
Monessen,	169	4			11	2	2	10			12	2			5		1	
Mount Carmel,	197				4		2	3		1	20			3	6	2		
Nanticoke,	284				5						8	3		2	9	3		
New Castle,	513	8				5	3	12	8	1	25	2	1	4	24	5	2	
Norristown,	669	7			1		2	6	10	1	70	3	6	5	41	4	2	
North Braddock,	162				4	3	8	1		1	9	3	2		10	1		
Oil City,	216	4	1		1				1		12		1	7	15	6	2	
Old Forge,	151				2		1	3			7	1			5			
Philadelphia (total),	26,291	114	3		190	27	43	320	346	61	2,767	181	184	112	1,549	317	78	
White,	24,021	107	3		175	25	31	308	318	58	2,328	159	147	104	1,466	305	75	
Colored,	2,270	7			15	2	12	12	28	3	439	22	37	8	83	12	3	
Phoenixville,	192	2					2	7	4		7		1		7	3	2	
Pittsburgh (total),	8,728	59	3		74	55	45	154	60	25	620	70	71	33	493	68	45	
White,	8,197	54	3		71	53	42	150	54	23	546	64	65	32	476	63	43	
Colored,	531	5			3	2	3	4	6	2	74	6	6	1	17	5	2	
Pittston,	297	1	1		1		5	5	3		9	1			8	3		
Plymouth,	175				1	3	2	2			12		2	2	10	2		
Pottstown,	231	4			1		1	5			19			1	12	5	2	
Pottsville,	402	8			3		1	4	4		28		3	2	15	2	2	

MORTALITY TABLE 4—Continued.

Registration Area.	Cause of Death.																
	All causes.*	Typhoid fever.	Malaria.	Smallpox.	Measles.	Scarlet fever.	Whooping cough.	Diphtheria and croup.	Influenza.	Erysipelas.	Tuberculosis of the lungs.†	Tuberculous meningitis.	Other forms of tuberculosis.	Rheumatism.	Cancer.‡	Diabetes.	Meningitis.
Reading,	1,455	20	1	------	7	6	6	10	13	2	98	7	12	8	86	18	10
Scranton,	2,114	18	------	------	8	4	5	40	13	6	104	18	12	8	131	12	11
Shamokin,	244	2	------	------	------	------	1	9	1	1	13	------	3	5	8	2	3
Sharon,	252	7	------	------	------	3	------	5	4	2	12	2	2	2	13	1	2
Shenandoah,	392	1	1	------	------	1	1	13	2	1	18	1	1	1	6	3	4
South Bethlehem,	306	5	------	------	5	------	4	3	2	------	31	1	5	------	10	8	1
Steelton (total),	156	------	------	------	------	1	------	3	2	------	12	3	2	2	13	3	1
White,	139	------	------	------	------	1	------	3	------	------	12	3	2	2	10	3	1
Colored,	17	------	------	------	------	------	------	------	2	------	------	------	------	------	3	------	------
Sunbury,	176	5	------	------	------	------	2	10	1	1	4	------	------	------	20	3	------
Uniontown (total),	266	8	------	------	------	1	------	1	1	1	18	------	2	1	17	3	------
White,	227	8	------	------	------	1	------	1	1	1	13	------	1	1	13	3	------
Colored,	39	------	------	------	------	------	------	------	------	------	5	------	1	------	4	------	------
Warren,	159	2	------	------	------	1	------	------	3	------	9	2	2	1	19	8	2
Washington (total),	294	8	1	------	------	------	------	3	3	------	32	2	7	1	16	4	4
White,	264	8	1	------	------	------	------	3	3	------	28	2	7	------	12	2	4
Colored,	30	------	------	------	------	------	------	------	------	------	4	------	------	1	4	2	------
West Chester (total),	271	3	------	------	------	------	------	1	3	1	24	2	3	------	19	------	2
White,	205	3	------	------	------	------	------	1	3	1	17	1	1	------	14	------	------
Colored,	66	------	------	------	------	------	------	------	------	------	7	1	2	------	5	------	2

Wilkes-Barre,	1,215	8			6	3	12	11	6	1	67	5	16	9	64	30	6
Wilkinsburg,	285	8				1	1	2	3	1	20	3	6		25	7	4
Williamsport,	555	6			1		3	9	7	2	27	3	2	9	36	9	6
York,	630	20				1	1	5	12	1	74	4	12	3	44	9	3
Rural (Including all Municipalities of More Than 10,000 Population).																	
Counties.																	
Adams,	415	4			1			2	6		25	1	2	3	25	5	1
Allegheny,	4,738	42	1		15	17	53	56	41	13	541	23	44	17	210	33	31
Armstrong,	863	12			6	1	5	17	13	1	41		3	2	41	6	8
Beaver,	1,019	6	1		11	4	12	9	6	1	71	3	12	5	39	10	6
Bedford,	424	6				2	2	4	12	3	26		2	2	35	5	5
Berks,	1,511	11					7	20	24	3	373	5	9	3	71	11	3
Blair,	755	6			2	5	6	13	11		53	3	5	7	41	10	6
Bradford,	895	15	1		1			7	32	1	28	3	2	4	67	13	2
Bucks,	1,068	8	1		7	1	5	1	35	2	82	5	4	10	57	28	2
Butler,	543	3	1			2	2	5	7	3	24	1	4	1	43	3	3
Cambria,	1,538	11			6	8	6	66	6	3	147	4	2	14	55	8	7
Cameron,	75								1		2				2	2	
Carbon,	838	6	1			8	10	25	14	1	56	1	2	5	32	10	1
Centre,	590	3			5	1	9	16	11	2	25	2	7	2	39	9	3
Chester (total),	1,099	6	1				6	14	17	1	76	3	8	7	67	9	3
White,	961	6	1				5	14	15	1	62	3	6	7	59	9	3
Colored,	138						1		2		14		2		8		
Clarion,	405	4						5	15		10	1	1	1	28	11	1
Clearfield,	944	2			6	2	13	14	11	4	34	5	9	5	63	7	5
Clinton,	440	6					3	5	4	3	26	2	3		20	6	4
Columbia,	557	8	1				5	10	9		22	1	3	2	36	10	2
Crawford,	746	4				1	1	5	29	1	31		5	6	59	11	5
Cumberland,	577	6						6	13		46	2	1	5	43	5	1
Dauphin,	886	7					3	11	13	3	78	5	8	6	45	12	2
Delaware (total),	1,102	7			2	1	6	6	25	1	112	5	8	8	70	14	7
White,	972	7			2	1	5	4	24	1	88	4	5	8	66	13	7
Colored,	130						1	2	1		24	1	3		4	1	1
Elk,	343	4				8		2	8	1	11	1	2	5	25	7	2
Erie,	661	5	2					2	20	2	46	3	2	4	50	18	2

MORTALITY TABLE 4—Continued.

Registration Area.	Cause of Death.																
	All causes.*	Typhoid fever.	Malaria.	Smallpox.	Measles.	Scarlet fever.	Whooping cough.	Diphtheria and croup.	Influenza.	Erysipelas.	Tuberculosis of the lungs.†	Tuberculous meningitis.	Other forms of tuberculosis.	Rheumatism.	Cancer.‡	Diabetes.	Meningitis.
Fayette,	1,793	14	-------	------	5	2	6	22	18	2	107	10	7	5	55	10	8
Forest,	80	-------	-------	------	-------	-------	-------	-------	2	-------	1	-------	-------	-------	4	1	-------
Franklin,	760	5	-------	------	1	1	2	5	13	3	216	2	9	4	23	6	3
Fulton,	127	2	-------	------	-------	-------	-------	-------	-------	-------	4	-------	1	-------	6	1	-------
Greene,	366	6	-------	------	2	-------	-------	3	18	1	23	1	2	4	23	3	4
Huntingdon,	536	10	-------	------	-------	1	8	9	6	-------	37	6	6	4	26	3	2
Indiana,	900	13	-------	------	-------	2	2	20	16	3	31	4	9	3	36	11	3
Jefferson,	731	13	1	------	-------	-------	5	7	19	1	38	2	7	6	53	10	3
Juniata,	196	-------	-------	------	-------	-------	2	3	4	-------	17	-------	1	2	9	1	1
Lackawanna,	1,465	4	-------	------	9	1	14	38	12	8	101	3	4	9	45	12	12
Lancaster,	1,374	13	1	------	2	3	8	7	23	5	112	5	13	7	91	19	6
Lawrence,	411	3	-------	------	-------	4	1	4	10	2	23	1	2	4	26	6	2
Lebanon,	542	6	-------	------	-------	-------	3	3	7	2	26	1	3	3	30	5	2
Lehigh,	1,124	13	-------	------	2	3	5	17	8	6	92	4	3	4	54	15	4
Luzerne,	2,869	14	2	------	31	15	41	74	21	9	189	4	5	16	98	21	14
Lycoming,	527	3	-------	------	2	-------	3	5	12	1	21	1	2	2	38	12	4
McKean,	369	5	-------	------	-------	3	6	3	2	1	23	2	1	4	29	10	1
Mercer,	719	12	-------	------	-------	4	-------	17	11	3	38	2	6	3	50	14	4
Mifflin,	394	6	-------	------	4	1	1	3	3	1	37	2	5	3	22	6	4
Monroe,	291	-------	1	------	-------	-------	1	3	-------	1	18	2	3	2	20	4	2
Montgomery,	1,781	15	-------	------	6	2	6	31	29	4	186	9	18	11	119	30	10
Montour,	351	26	-------	------	1	-------	-------	1	4	3	31	1	2	2	23	4	-------
Northampton,	1,071	9	-------	------	2	9	20	12	13	6	65	1	5	8	45	19	6
Northumberland,	846	3	1	------	3	3	4	4	11	-------	58	2	1	4	31	10	2
Perry,	286	11	-------	------	-------	1	3	6	-------	1	27	1	2	1	19	3	3

Pike,	125		1		1	1	1		7		9		2		5	1	
Potter,	284	4				1		1	10	1	8	3	2		33	4	5
Schuylkill,	2,489	22	2		20	12	14	52	18	4	165	8	11	9	74	29	11
Snyder,	186	2			1			3			13		1		17	3	
Somerset,	981	12			3	5	3	37	19	4	50	3	7	5	31	8	5
Sullivan,	121				2			3	2	1	4		1	1	5		1
Susquehanna,	595	3			5	1	14	3	24	2	31	2	3	4	42	4	1
Tioga,	562	8			1		2	4	10	1	29	2	5	5	50	8	3
Union,	187	1			1		3				8		1	2	14	1	2
Venango,	472	5				2		1	10	3	49		4	5	31	12	1
Warren,	471	1	1			3	2	1	9	1	27	1	4	3	23	7	2
Washington,	1,768	20			4	10	5	26	18	4	94	9	7	6	91	6	9
Wayne,	416	2					4	5	12		24	1	2		30	12	2
Westmoreland,	2,559	37			7	10	8	36	32	8	157	15	23	12	99	14	17
Wyoming,	205						3	1	2		11	1		2	9	1	
York,	968	15			1	3	7	10	16		72	4	8	6	61	6	4

*Exclusive of stillbirths. †Including "acute miliary tuberculosis." ‡"Cancer and other malignant tumors."

MORTALITY TABLE 4—Continued.

Registration Area.	Cause of Death.																
	Cerebral haemorrhage and softening.	Organic diseases of the heart.	Bronchitis.	Pneumonia (all forms).	Other respiratory diseases.	Diarrhoea and enteritis (under 2 year).	Appendicitis.	Hernia, intestinal obstruction.	Cirrhosis of the liver.	Nephritis, Bright's disease.	Puerperal fever.	Other puerperal affections.	Congenital debility and malformations.	Violent deaths (excluding suicide).	Suicide.	Ill defined and unknown.	All other causes.
Entire State,	6,848	11,846	1,603	12,435	1,394	7,603	799	945	1,067	8,692	587	814	7,758	7,766	1,081	704	18,217
White,	6,688	11,372	1,535	11,831	1,330	7,386	768	909	1,042	8,314	562	790	7,516	7,554	1,065	682	17,499
Colored,	160	474	68	604	64	217	31	36	25	378	25	24	242	212	16	22	718
Total cities (10,000 population and over),	3,046	6,377	856	6,807	739	3,857	588	587	588	5,191	346	428	3,675	3,804	614	135	9,055
White,	2,937	6,015	803	6,310	693	3,690	560	557	569	4,888	325	407	3,494	3,642	604	127	8,506
Colored,	109	362	53	497	46	167	28	30	19	303	21	21	181	162	10	8	549
Total rural (inclusive of municipalities under 10,000),	3,802	5,469	747	5,628	655	3,746	211	358	479	3,501	241	386	4,083	3,962	467	569	9,162
White,	3,751	5,357	732	5,521	637	3,696	208	352	473	3,426	237	383	4,022	3,912	461	555	8,993
Colored,	51	112	15	107	18	50	3	6	6	75	4	3	61	50	6	14	169
Cities (of 10,000 Population and Over).																	
Allentown,	91	83	7	78	13	67	9	10	11	83	4	8	89	77	16	7	136
Altoona,	31	81	4	80	11	28	6	8	9	46	6	8	49	49	7	1	145
Beaver Falls,	6	11	4	15	2	11	4	1	1	23	------	1	11	12	1	------	26
Bethlehem,	21	17	4	20	3	3	------	2	------	15	------	------	13	6	2	1	19
Braddock,	8	19	3	70	6	69	7	1	3	15	2	4	21	31	7	------	51
Bradford,	18	28	2	11	3	7	2	3	1	24	2	1	13	10	2	------	50
Butler,	13	28	3	22	4	16	4	4	3	18	3	------	23	20	3	1	37

Carbondale,	19	11	2	39	------	13	8	3	2	27	4	4	26	44	3	1	38
Carlisle (total),	15	20	1	6	2	3	------	1	------	14	------	1	8	12	------	1	38
White,	13	16	1	5	1	2	------	1	------	13	------	------	7	11	------	1	29
Colored,	2	4	------	1	1	1	------	------	------	1	------	1	1	1	------	------	9
Carnegie,	5	13	4	15	------	5	------	------	3	9	------	1	24	12	------	1	18
Chambersburg (total),	17	19	2	14	2	3	3	3	------	12	------	------	8	11	2	------	37
White,	15	19	2	13	2	2	3	3	------	10	------	------	8	9	2	------	34
Colored,	2	------	------	1	------	1	------	------	------	2	------	------	------	2	------	------	3
Chester (total),	35	81	3	72	5	54	3	4	6	45	6	6	42	52	3	1	81
White,	30	64	2	52	4	46	2	2	3	39	4	6	33	47	3	1	69
Colored,	5	17	1	20	1	8	1	2	3	6	2	------	9	5	------	------	12
Coatesville (total),	9	10	1	15	------	13	------	------	2	9	------	1	16	2	------	------	18
White,	8	10	1	11	------	11	------	------	2	8	------	1	13	2	------	------	15
Colored,	1	------	------	4	------	2	------	------	------	1	------	------	3	------	------	------	3
Columbia,	15	22	2	7	2	4	2	2	2	12	------	1	11	14	------	2	23
Connellsville,	12	13	3	25	3	4	1	4	1	7	------	1	19	15	4	1	30
DuBois,	4	13	3	15	4	7	2	1	2	9	3	1	17	8	------	1	19
Dunmore,	15	21	28	53	4	37	------	1	2	11	1	2	42	18	1	1	53
Duquesne,	3	7	6	38	3	36	1	1	1	6	1	4	16	14	3	2	21
Easton,	36	46	6	36	5	18	11	5	4	49	1	5	30	45	4	2	73
Erie,	96	170	2	71	8	71	15	16	21	98	6	8	59	106	14	------	162
Farrell,	3	7	1	27	1	18	------	------	2	2	3	4	13	8	1	2	13
Greensburg,	12	18	1	15	2	5	5	2	4	10	1	3	16	33	3	6	31
Harrisburg (total),	67	134	10	75	16	16	13	14	10	109	10	6	57	73	14	2	165
White,	63	118	7	57	15	14	11	13	10	104	7	5	55	63	14	1	143
Colored,	4	16	3	18	1	2	2	1	------	5	3	1	2	10	------	1	22
Hazleton,	30	48	13	54	11	39	10	6	3	46	5	6	45	44	3	1	71
Homestead,	4	15	3	40	4	51	------	2	4	7	------	2	23	7	1	------	28
Johnstown,	33	49	11	128	15	59	9	15	11	47	7	9	92	107	4	4	147
Lancaster,	72	105	8	50	9	33	9	5	10	76	8	2	37	42	9	------	141
Lebanon,	24	27	3	31	5	11	5	4	1	31	------	------	25	18	1	6	83

MORTALITY TABLE 4—Continued.

Registration Area.	Cause of Death.															
	Cerebral haemorrhage and softening.	Organic diseases of the heart.	Bronchitis.	Pneumonia (all forms).	Other respiratory diseases.	Diarrhoea and enteritis (under 2 year).	Appendicitis.	Hernia, intestinal obstruction.	Cirrhosis of the liver.	Nephritis, Bright's disease.	Puerperal fever.	Other puerperal affections.	Congenital debility and malformations.	Violent deaths (excluding suicide).	Suicide.	Ill defined and unknown.	All other causes.
McKees Rocks,	6	10	4	49	4	35	1	1	1	6	1	1	16	16	2	1	20
McKeesport,	32	38	13	87	12	53	6	11	10	35	4	9	44	57	10	-----	95
Mahanoy City,	12	13	4	23	9	29	-----	-----	2	10	-----	3	16	18	-----	4	41
Meadville,	29	31	-----	11	2	5	1	4	1	18	2	1	12	21	2	-----	46
Monessen,	4	3	-----	25	1	26	1	-----	1	3	-----	-----	17	7	2	7	23
Mount Carmel,	5	17	3	23	2	20	-----	-----	3	9	1	4	24	15	-----	1	29
Nanticoke,	9	19	3	36	9	48	1	1	1	20	2	3	29	32	2	1	38
New Castle,	25	42	6	49	8	34	6	5	4	27	5	5	42	40	6	6	103
Norristown,	41	76	11	48	10	22	3	7	3	73	1	2	25	29	2	1	157
North Braddock,	5	8	3	32	1	25	-----	-----	1	8	-----	-----	11	11	-----	-----	15
Oil City,	16	18	2	20	2	8	2	1	1	15	-----	2	8	20	2	1	48
Old Forge,	6	7	5	23	2	32	-----	1	-----	6	2	4	17	18	-----	-----	9
Philadelphia (total),	1,168	3,382	371	2,863	277	1,515	236	247	256	2,812	115	163	1,326	1,190	280	25	3,773
White,	1,110	3,140	330	2,567	252	1,415	217	229	249	2,598	103	150	1,222	1,106	273	20	3,431
Colored,	58	242	41	296	25	100	19	18	7	214	12	13	104	84	7	5	342
Phoenixville,	10	10	5	16	3	13	1	1	2	23	1	-----	16	19	1	-----	30
Pittsburgh (total),	382	678	141	1,404	115	558	98	87	102	526	71	56	559	628	88	16	1,344
White,	365	637	137	1,302	105	534	93	83	100	489	68	53	527	597	87	16	1,265
Colored,	17	41	4	102	10	24	5	4	2	37	3	3	32	31	1	-----	79
Pittston,	11	18	4	43	8	28	1	1	3	21	3	2	19	50	1	3	44
Plymouth,	7	12	3	21	4	15	-----	-----	1	12	1	1	18	19	1	-----	24
Pottstown,	33	35	-----	14	8	7	1	1	1	9	-----	4	13	15	4	1	35

Pottsville,	22	38	------	35	4	17	9	5	5	51	6	5	29	47	3	------	54
Reading,	113	176	23	90	13	77	12	17	18	125	4	16	85	79	30	3	270
Scranton,	100	185	44	287	27	197	16	27	11	148	19	14	120	188	24	2	315
Shamokin,	12	18	5	29	5	20	1	------	2	20	1	2	30	10	2	------	39
Sharon,	17	25	1	28	2	18	1	3	------	10	2	3	20	19	------	3	45
Shenandoah,	9	12	16	53	11	96	------	1	6	19	1	------	34	34	2	1	43
South Bethlehem,	14	15	2	28	1	48	1	------	2	15	1	1	41	20	5	2	31
Steelton (total),	13	11	1	21	------	13	------	------	1	8	------	1	15	11	------	1	18
White,	11	10	1	18	------	11	------	------	------	8	------	1	14	11	------	1	16
Colored,	2	1	------	3	------	2	------	------	1	------	------	------	1	------	------	------	2
Sunbury,	9	28	1	8	1	3	2	1	2	15	1	1	14	9	2	1	34
Uniontown (total),	2	17	5	39	2	8	5	5	1	20	6	------	21	33	4	------	45
White,	2	14	4	34	2	7	4	5	1	16	6	------	18	29	4	------	38
Colored,	------	3	1	5	------	1	1	------	------	4	------	------	3	4	------	------	7
Warren,	9	18	2	4	2	3	2	2	1	6	------	------	4	15	1	2	39
Washington (total),	9	25	2	27	6	15	1	5	2	18	2	3	25	16	5	1	51
White,	9	24	2	25	6	13	1	4	2	16	2	3	23	14	5	------	45
Colored,	------	1	------	2	------	2	------	1	------	2	------	------	2	2	------	1	6
West Chester,	17	30	2	19	4	13	5	4	1	35	2	3	13	11	3	1	50
White,	15	21	1	14	4	7	5	4	1	29	1	1	10	10	2	1	38
Colored,	2	9	1	5	------	6	------	------	------	6	1	2	3	1	1	------	12
Wilkes-Barre,	54	95	10	107	18	110	20	15	11	89	10	16	80	143	4	7	182
Wilkinsburg,	26	22	2	35	4	8	5	------	7	13	3	6	17	16	3	------	37
Williamsport,	40	57	11	34	14	21	13	8	4	55	3	6	31	34	4	------	100
York,	59	72	11	54	5	16	8	8	2	51	3	2	39	24	11	------	76
Rural (Including all Municipalities of More Than 10,000 Population).																	
Counties.																	
Adams,	58	75	5	23	5	7	1	------	2	45	3	1	22	22	5	4	62
Allegheny,	250	388	52	614	58	397	13	28	54	227	23	35	316	308	49	9	780
Armstrong,	57	88	15	94	9	70	2	1	13	54	5	5	81	72	9	3	130

MORTALITY TABLE 4—Continued.

Registration Area.	Cause of Death.																
	Cerebral haemorrhage and softening.	Organic diseases of the heart.	Bronchitis.	Pneumonia (all forms).	Other respiratory diseases.	Diarrhoea and enteritis (under 2 year).	Appendicitis.	Hernia, intestinal obstruction.	Cirrhosis of the liver.	Nephritis, Bright's disease.	Puerperal fever.	Other puerperal affections.	Congenital debility and malformations.	Violent deaths (excluding suicide).	Suicide.	Ill defined and unknown.	All other causes.
Beaver,	44	75	5	149	8	70	3	8	8	53	9	15	80	99	19	1	177
Bedford,	38	52	4	28	5	11	2	-----	4	43	1	2	35	24	4	4	63
Berks,	119	152	28	91	22	46	3	11	11	91	5	6	86	78	16	21	185
Blair,	55	62	9	74	7	31	5	3	5	66	3	3	65	45	1	8	145
Bradford,	79	114	11	75	10	14	7	8	4	83	2	7	47	57	10	6	185
Bucks,	119	134	14	83	12	34	5	7	5	95	4	10	58	46	15	6	173
Butler,	47	53	7	57	8	30	1	2	13	42	1	2	28	37	10	10	93
Cambria,	43	99	20	204	22	174	7	4	18	60	6	14	161	147	9	10	197
Cameron,	1	16	-----	6	-----	2	-----	-----	2	8	-----	-----	4	16	1	-----	12
Carbon,	58	36	9	88	9	91	2	6	12	66	4	5	51	83	6	4	136
Centre,	55	64	8	53	1	19	4	6	2	33	3	4	54	36	-----	5	109
Chester (total),	80	155	16	97	9	49	4	9	5	115	2	4	60	62	7	10	197
White,	76	143	14	80	5	39	3	7	4	101	1	4	48	53	6	8	178
Colored,	4	12	2	17	4	10	1	2	1	14	1	-----	12	9	1	2	19
Clarion,	34	51	4	35	3	15	1	3	1	19	1	3	34	34	2	4	84
Clearfield,	67	91	10	118	11	69	4	7	10	47	1	13	93	58	8	15	142
Clinton,	41	50	5	27	5	8	3	4	1	41	3	2	33	37	9	2	87
Columbia,	74	55	7	58	6	27	2	8	5	31	4	8	35	26	5	2	95
Crawford,	85	109	15	33	9	11	4	2	5	51	3	4	30	41	11	9	166
Cumberland,	67	65	10	39	8	9	2	6	4	60	1	4	41	23	4	3	103
Dauphin,	66	95	7	68	10	27	-----	2	9	82	4	1	59	52	11	2	198

Delaware (total),	69	121	16	107	7	79	2	3	15	107	------	4	59	53	9	2	177
White,	61	109	12	87	4	73	1	3	15	98	------	4	53	49	9	2	157
Colored,	8	12	4	20	3	6	1	------	------	9	------	------	6	4	------	------	20
Elk,	24	28	7	34	5	17	4	4	4	18	2	3	29	33	1	2	52
Erie,	63	108	8	46	4	10	3	8	12	45	2	1	23	42	13	5	112
Fayette,	64	123	14	238	17	278	4	3	13	66	11	13	210	156	7	26	276
Forest,	6	8	4	6	------	5	------	1	1	7	1	1	3	12	1	1	15
Franklin,	68	59	9	39	4	23	------	7	3	61	1	5	43	31	5	2	107
Fulton,	10	13	2	17	1	3	1	1	3	5	------	1	10	8	1	2	35
Greene,	23	32	3	42	3	17	1	------	1	25	------	2	17	21	5	5	79
Huntingdon,	43	38	4	50	6	15	1	9	1	53	6	3	41	36	2	6	101
Indiana,	41	85	16	111	13	87	6	7	2	47	5	10	80	78	6	3	150
Jefferson,	38	61	12	68	12	43	11	5	10	38	2	8	59	55	3	6	135
Juniata,	13	40	------	8	1	7	1	1	1	16	------	1	8	13	1	3	42
Lackawanna,	57	87	37	213	18	141	5	9	5	100	8	9	111	140	6	6	241
Lancaster,	154	171	15	141	15	37	5	9	13	119	3	6	83	62	8	2	216
Lawrence,	24	41	8	38	2	19	------	2	3	24	------	3	41	40	1	12	63
Lebanon,	47	58	7	64	7	25	2	1	5	35	1	4	35	31	8	11	110
Lehigh,	102	120	11	116	15	59	7	9	6	55	8	4	68	96	19	9	190
Luzerne,	102	191	66	406	49	353	5	18	23	153	10	14	229	264	10	43	379
Lycoming,	52	75	7	35	4	13	2	2	2	49	------	6	25	30	7	3	109
McKean,	25	44	2	28	4	12	6	2	------	22	1	3	37	27	2	4	60
Mercer,	60	79	7	79	8	25	5	4	2	43	5	6	40	40	7	6	139
Mifflin,	40	42	5	26	2	16	1	2	3	18	------	3	36	33	2	5	62
Monroe,	28	32	6	26	3	12	2	3	6	17	3	5	17	24	2	1	47
Montgomery,	152	211	29	169	21	88	3	12	11	134	2	10	87	107	22	6	250
Montour,	27	44	------	19	1	8	1	------	4	16	3	1	9	11	------	1	108
Northampton,	109	105	21	104	13	88	1	6	12	65	3	8	89	56	11	10	150
Northumberland,	57	66	6	75	18	67	9	8	10	43	3	16	91	91	4	4	138
Perry,	23	40	2	14	3	3	1	2	4	22	1	2	20	12	------	5	54
Pike,	7	16	------	9	2	4	------	1	4	11	------	1	3	13	1	2	23
Potter,	29	38	5	5	1	6	3	2	3	15	2	3	16	12	1	2	59
Schuylkill,	125	185	31	254	57	281	16	26	33	153	20	23	210	225	14	17	368
Snyder,	20	26	2	13	3	3	------	1	3	22	1	------	14	2	4	4	28
Somerset,	43	91	9	106	11	90	3	3	8	36	5	8	107	80	1	17	171
Sullivan,	10	17	4	13	3	5	------	1	1	5	1	------	9	6	------	1	25
Susquehanna,	47	71	10	61	5	16	3	7	6	39	2	3	25	37	6	3	115
Tioga,	44	85	8	44	7	7	5	5	5	41	2	1	36	23	6	2	113

MORTALITY TABLE 4—Continued.

Registration Area.	Cause of Death.															
	Cerebral haemorrhage and softening.	Organic diseases of the heart.	Bronchitis.	Pneumonia (all forms).	Other respiratory diseases.	Diarrhoea and enteritis (under 2 year).	Appendicitis.	Hernia, intestinal obstruction.	Cirrhosis of the liver.	Nephritis, Bright's disease.	Puerperal fever.	Other puerperal affections.	Congenital debility and malformations.	Violent deaths (excluding suicide).	Suicide.	Ill defined and unknown.	All other causes.
Union,	13	46	1	14	2	3	1	2	----	12	----	----	9	8	----	2	41
Venango,	38	59	5	34	1	16	4	3	2	31	2	1	19	25	4	3	102
Warren,	39	88	3	39	5	8	1	2	5	30	----	4	27	18	4	3	111
Washington,	69	152	30	201	26	212	3	11	16	54	9	10	180	208	18	15	245
Wayne,	38	50	8	40	4	7	1	9	3	43	2	1	16	17	2	4	77
Westmoreland,	114	183	35	233	25	293	6	14	17	108	17	24	253	225	19	161	357
Wyoming,	17	28	3	28	3	4	----	2	----	16	2	2	9	18	4	1	38
York,	91	133	8	100	7	30	1	6	5	70	4	5	71	40	7	4	173

MORTALITY TABLE 5.

Deaths in the entire State and for each municipality having more than 10,000 population, and for rural sections of each county, including all municipalities having less than 10,000 population, by color, nativity and parent nativity. (Stillbirths excluded.)

Registration Area.	All deaths.	White.										Negro.	Indian, Chinese, Japanese.
		Total.	Native.							Foreign born.	Nativity unknown.		
			Total.	Both parents native.	Both parents foreign born.	One parent native, the other foreign born.	One parent unknown, the other—		Both parents unknown.				
							Native.	Foreign born.					
Entire State,	115,284	110,596	85,603	49,029	22,485	6,202	2,862	872	4,153	24,013	980	4,659	29
Total cities (of more than 10,000 population),	59,954	56,354	40,685	20,692	12,705	3,487	1,203	484	2,114	15,123	546	3,574	26
Allentown,	994	994	841	613	166	31	14	3	14	145	8	-------	-------
Altoona,	709	699	599	444	78	49	11	5	12	98	2	10	-------
Beaver Falls,	179	178	137	74	36	7	8	3	9	39	2	1	-------
Bethlehem,	158	158	141	121	7	6	2	-------	5	16	1	-------	-------
Braddock,	387	379	273	75	170	21	4	1	2	104	2	8	-------
Bradford,	231	228	171	102	34	16	5	5	9	54	3	3	-------
Butler,	255	254	212	141	40	17	7	2	5	41	1	1	-------
Carbondale,	283	283	189	87	67	28	4	2	1	93	1	-------	-------
Carlisle,	152	125	121	104	2	2	8	-------	5	3	1	26	1
Carnegie,	138	133	100	36	47	11	4	2	-------	31	2	5	-------
Chambersburg,	175	161	154	123	9	5	8	-------	9	7	-------	14	-------
Chester,	658	529	387	194	120	36	17	8	12	138	4	129	-------
Coatesville,	131	112	99	55	27	7	8	2	-------	13	-------	19	-------
Columbia,	157	143	123	94	16	5	3	1	4	17	3	14	-------
Connellsville,	179	163	131	85	26	10	9	-------	1	31	1	16	-------

MORTALITY TABLE 5—Continued.

Registration Area.	All deaths.	White.										Negro.	Indian, Chinese, Japanese.
		Total.	Native.							Foreign born.	Nativity unknown.		
			Total.	Both parents native.	Both parents foreign born.	One parent native, the other foreign born.	One parent unknown, the other—		Both parents unknown.				
							Native.	Foreign born.					
DuBois,	128	128	102	57	27	11	2	2	3	26			
Dunmore,	359	358	253	59	92	12	11	3	76	99	6	1	
Duquesne,	193	191	143	26	106	9			2	47	1	2	
Easton,	472	468	378	270	58	26	10	5	9	83	7	4	
Erie,	1,107	1,100	765	295	284	77	23	10	76	324	11	7	
Farrell,	142	140	94	16	70	7	1			46		2	
Greensburg,	209	201	146	95	21	11	5	1	13	52	3	8	
Harrisburg,	1,004	885	775	595	69	42	36	5	28	98	12	119	
Hazleton,	523	523	362	147	158	48	3	3	3	160	1		
Homestead,	235	213	173	49	101	16	4	1	2	40		22	
Johnstown,	937	918	681	355	234	60	20	4	8	234	3	19	
Lancaster,	809	801	699	549	58	30	25	4	33	98	4	8	
Lebanon,	326	324	297	266	17	6	3		5	25	2	2	
McKees Rocks,	198	197	154	40	95	12	1	4	2	42	1	1	
McKeesport,	634	615	406	167	182	39	8	2	8	204	5	19	
Mahanoy City,	229	229	176	60	91	18		4	3	52	1		
Meadville,	222	220	185	115	28	16	16	5	5	35		2	
Monessen,	169	165	130	28	93	8	1			35		4	
Mount Carmel,	197	197	154	66	55	21	4	4	4	42	1		
Nanticoke,	284	284	179	33	110	33	2	1		104	1		

New Castle,	513	498	386	207	110	24	10	3	32	106	6	15	-------
Norristown,	669	633	482	287	105	39	15	6	30	144	7	35	1
North Braddock,	162	158	117	39	56	17	3	1	1	41	-------	4	-------
Oil City,	216	210	159	71	55	10	12	-------	11	50	1	6	-------
Old Forge,	151	150	103	16	73	12	1	1	-------	47	-------	1	-------
Philadelphia,	26,291	24,021	16,450	7,753	5,168	1,511	534	217	1,267	7,284	287	2,248	22
Phoenixville,	192	190	147	91	44	9	1	1	1	43	-------	2	-------
Pittsburgh,	8,728	8,197	5,530	2,299	2,205	599	149	94	184	2,581	86	529	2
Pittston,	297	296	185	49	115	13	2	3	3	107	4	1	-------
Plymouth,	175	175	118	40	55	18	2	1	2	57	-------	-------	-------
Pottstown,	231	220	196	160	20	9	5	-------	2	20	4	11	-------
Pottsville,	462	401	326	200	81	22	5	10	8	72	3	1	-------
Reading,	1,455	1,442	1,284	1,032	165	45	27	1	14	151	7	13	-------
Scranton,	2,114	2,099	1,352	510	630	148	24	11	29	737	10	15	-------
Shamokin,	244	244	212	143	43	21	-------	2	3	31	1	-------	-------
Sharon,	252	247	176	84	64	10	9	3	6	70	1	5	-------
Shenandoah,	392	392	290	48	202	22	4	4	10	102	-------	-------	-------
South Bethlehem,	300	297	223	70	129	6	4	3	11	74	-------	3	-------
Steelton,	156	139	122	71	39	3	4	2	3	16	1	17	-------
Sunbury,	176	175	170	147	4	3	9	1	6	4	1	1	-------
Uniontown,	266	227	154	110	27	9	2	-------	6	66	7	39	-------
Warren,	159	158	119	55	27	9	14	2	12	36	3	1	-------
Washington,	294	264	232	169	31	9	14	2	7	32	-------	30	-------
West Chester,	271	205	188	150	10	7	10	4	7	15	2	66	-------
Wilkes-Barre,	1,215	1,205	793	301	356	92	14	8	22	401	11	10	-------
Wilkinsburg,	285	278	217	141	36	21	7	2	10	58	3	7	-------
Williamsport,	555	532	466	334	41	31	17	8	35	63	3	23	-------
York,	630	605	558	479	20	15	18	2	24	39	8	25	-------
Rural (including all municipalities of more than 10,000 population), total,	55,330	54,242	44,918	28,337	9,780	2,715	1,659	388	2,039	8,890	434	1,085	3
Adams County,	415	411	399	328	3	13	32	4	19	10	2	4	-------
Allegheny County,	4,738	4,569	3,187	1,333	1,257	340	79	32	146	1,334	48	169	-------
Armstrong County,	863	861	752	494	156	40	29	6	27	105	4	2	-------
Beaver County,	1,019	1,005	787	399	267	51	39	3	28	209	9	14	-------
Bedford County,	424	417	405	348	12	10	20	1	14	9	3	7	-------
Berks County,	1,511	1,476	1,323	1,170	69	38	20	4	22	145	8	35	-------
Blair County,	755	746	690	550	60	24	25	2	29	51	5	9	-------
Bradford County,	895	888	824	608	67	31	43	6	69	52	12	7	-------
Bucks County,	1,068	1,023	899	716	78	38	29	4	34	117	7	45	-------
Butler County,	543	541	461	301	86	35	14	7	18	75	5	2	-------

MORTALITY TABLE 5—Continued.

Registration Area.	All deaths.	White.										Negro.	Indian, Chinese, Japanese.
		Total.	Native.							Foreign born.	Nativity unknown.		
			Total.	Both parents native.	Both parents foreign born.	One parent native, the other foreign born.	One parent unknown, the other—		Both parents unknown.				
							Native.	Foreign born.					
Cambria County,	1,538	1,527	1,171	524	477	117	17	13	23	349	7	11	
Cameron County,	75	74	59	36	7	11	2	3		14	1	1	
Carbon County,	838	837	625	353	206	44	13	2	7	195	17		1
Centre County,	590	584	542	406	58	16	32	4	26	42		6	
Chester County,	1,099	961	852	646	83	47	36		40	101	8	137	1
Clarion County,	405	402	367	266	38	20	20	3	20	34	1	3	
Clearfield County,	944	941	761	446	183	66	25	7	34	174	6	3	
Clinton County,	440	437	385	259	42	19	25	3	37	52		3	
Columbia County,	557	555	520	375	63	27	27	2	26	35		2	
Crawford County,	746	742	632	447	50	31	45	11	48	99	11	4	
Cumberland County,	577	562	550	445	11	11	47	3	33	7	5	15	
Dauphin County,	886	853	765	589	62	20	28	2	64	75	13	33	
Delaware County,	1,102	972	755	484	148	68	21	10	24	267	10	130	
Elk County,	343	343	232	110	76	19	5	3	19	108	3		
Erie County,	661	661	541	334	50	41	50	8	58	113	7		
Fayette County,	1,793	1,711	1,417	673	583	71	41	17	32	267	27	82	
Forest County,	80	80	62	38	11	6	7			18			
Franklin County,	760	728	671	547	34	25	27	7	31	56	1	32	
Fulton County,	127	124	123	111	2	2	4		4	1		3	
Greene County,	366	364	348	285	11	8	20	5	19	13	3	2	

Huntingdon County,	536	533	495	363	57	15	26	4	30	32	6	3	
Indiana County,	900	897	871	456	213	44	30	10	28	110	6	3	
Jefferson County,	731	730	600	395	123	36	17	6	23	129	1	1	
Juniata County,	196	194	190	167	1	1	8	1	12	3	1	2	
Leckawanna County,	1,465	1,463	946	291	513	101	17	5	19	505	12	2	
Lancaster County,	1,374	1,352	1,290	1,178	21	24	40	2	25	56	6	22	
Lawrence County,	411	409	336	183	88	30	9	4	22	70	3	2	
Lebanon County,	542	538	516	460	18	9	9	2	18	19	3	4	
Lehigh County,	1,124	1,123	937	689	147	33	18	6	44	180	6	1	
Luzerne County,	2,869	2,860	2,663	711	1,017	216	41	23	55	776	21	9	
Lycoming County,	527	518	470	367	32	22	25	2	22	46	2	9	
McKean County,	369	365	285	169	58	19	16	7	16	72	8	4	
Mercer County,	719	714	613	384	83	39	36	4	67	91	10	5	
Mifflin County,	394	390	369	314	11	5	25	1	13	15	6	4	
Monroe County,	291	289	264	210	16	12	13	1	12	23	2	2	
Montgomery County,	1,781	1,698	1,397	971	242	86	48	15	35	294	7	83	
Montour County,	351	345	277	121	13	9	10	1	123	56	12	6	
Northampton County,	1,071	1,069	919	628	206	25	23	4	33	145	5	2	
Northumberland County,	846	844	712	475	141	50	31	2	13	131	1	2	
Perry County,	286	285	277	236	8	8	8		17	5	3	1	
Pike County,	125	123	94	62	14	6	3	3	6	26	3	2	
Potter County,	284	283	239	167	20	8	15	3	26	31	13	1	
Schuylkill County,	2,489	2,481	1,890	933	720	154	35	13	35	578	13	8	
Snyder County,	186	186	185	154	1	2	13		15		1		
Somerset County,	981	979	831	522	224	40	22	6	17	145	3	2	
Sullivan County,	121	121	99	60	26	9	4			22			
Susquehanna County,	595	591	513	341	77	30	40	3	22	73	5	4	
Tioga County,	562	558	481	350	36	18	31	5	41	71	6	4	
Union County,	187	185	179	148	2	4	8	1	16	4	2	2	
Venango County,	472	461	400	282	32	32	22	1	31	49	12	11	
Warren County,	471	470	359	185	45	23	24	9	73	99	12		1
Washington County,	1,768	1,760	1,342	614	538	104	33	19	34	352	6	68	
Wayne County,	416	416	330	194	63	35	21	4	13	86			
Westmoreland County,	2,559	2,519	2,019	1,006	692	154	52	47	68	491	9	40	
Wyoming County,	205	204	188	139	8	9	19		13	12	4	1	
York County,	968	954	927	791	24	23	44	5	40	26	1	14	

MORTALITY TABLE 6.

Deaths in each city having more than 100,000 population, from certain specified causes, by age and color. (Stillbirths excluded.)

Registration Area.	Age.													
	All Ages	Under 1	1	2	3	4	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39
Entire State.														
Total,	115,284	23,933	4,353	1,777	1,026	762	31,851	2,412	1,521	2,563	3,636	4,048	4,115	4,826
Males,	61,998	13,519	2,272	957	534	409	17,691	1,262	791	1,323	1,958	2,240	2,357	2,804
Females,	53,286	10,414	2,081	821	492	353	14,160	1,150	730	1,240	1,678	1,808	1,758	2,022
White,	110,546	23,127	4,137	1,700	983	746	30,693	2,320	1,430	2,404	3,421	3,770	3,827	4,461
Males,	59,417	13,086	2,161	916	514	403	17,080	1,219	749	1,253	1,860	2,088	2,194	2,583
Females,	51,179	10,041	1,976	784	469	343	13,613	1,101	681	1,151	1,561	1,682	1,633	1,878
Native,	85,603	23,054	4,098	1,662	962	729	30,505	2,231	1,334	2,052	2,482	2,483	2,450	2,791
Males,	44,855	13,051	2,142	895	502	391	16,981	1,171	695	1,038	1,233	1,232	1,309	1,467
Females,	40,748	10,003	1,956	767	460	338	13,524	1,060	639	1,014	1,249	1,251	1,141	1,324
Both parents native, (M.	25,076	6,231	910	429	242	198	8,010	682	428	632	747	738	777	891
Both parents native, (F.	23,953	4,666	857	373	221	184	6,281	612	396	644	780	800	726	821
One or both parents foreign, (M.	16,021	6,560	1,210	455	255	189	8,669	472	260	385	436	412	439	528
One or both parents foreign, (F.	13,538	5,097	1,086	381	235	152	6,951	435	234	339	417	382	349	392
Parentage unknown, (M.	3,758	260	22	11	5	4	302	17	7	21	50	82	93	138
Parentage unknown, (F.	3,257	240	33	13	4	2	292	13	9	31	52	69	66	111
Foreign,	24,013	45	34	34	19	15	147	86	91	348	909	1,249	1,314	1,580
Males,	13,812	19	17	18	11	11	73	45	50	212	600	821	834	1,036
Females,	10,201	26	17	16	8	4	71	41	41	136	309	428	480	544

Unknown,	980	28	5	4	2	2	41	3	5	4	30	38	63	90
Males,	750	16	2	3	1	1	23	3	4	3	27	35	51	80
Females,	230	12	3	1	1	1	18		1	1	3	3	12	10
Colored,	4,688	806	216	77	43	10	1,158	92	91	159	215	278	288	365
Males,	2,491	433	111	41	20	6	611	43	42	70	98	152	163	221
Females,	2,197	373	105	36	23	10	547	49	49	89	117	126	125	144
Negro, (M.)	2,464	433	111	41	20	6	611	43	42	70	96	151	160	218
(F.)	2,195	373	105	36	23	10	547	49	49	88	117	126	124	144
Indian, (M.)	2												2	
(F.)	1									1				
Chinese, (M.)	22										2			2
(F.)	1												1	
Japanese, (M.)	3											1	1	1
(F.)														
Other colored, (M.)														
(F.)														
Philadelphia.														
Total,	26,291	4,233	919	376	215	146	5,889	494	309	550	842	981	1,011	1,328
Males,	13,713	2,319	471	211	106	79	3,186	206	168	277	413	514	556	775
Females,	12,578	1,914	448	165	109	67	2,703	288	141	273	429	467	455	553
White,	24,021	3,861	810	333	193	138	5,335	454	275	478	730	831	856	1,124
Males,	12,519	2,118	417	189	96	77	2,897	247	152	245	366	433	462	646
Females,	11,502	1,743	393	144	97	61	2,438	207	123	233	364	398	394	478
Native,	16,450	3,841	802	327	186	132	5,288	431	253	390	541	581	550	722
Males,	8,571	2,109	413	186	95	73	2,876	236	142	195	264	290	295	402
Females,	7,879	1,732	389	141	91	59	2,412	195	111	195	277	291	255	320
Both parents native, (M.)	3,973	1,612	174	87	44	27	1,344	114	66	98	126	136	136	149
(F.)	3,780	769	162	59	33	26	1,049	97	55	99	143	135	126	160
One or both parents foreign, (M.)	3,625	993	227	94	51	46	1,411	119	74	99	127	134	141	209
(F.)	3,271	855	211	78	56	32	1,232	93	56	91	117	132	113	130
Parentage unknown, (M.)	973	104	12	5			121	3	2	7	11	20	18	44
(F.)	828	108	16	4	2	1	131	5		5	17	24	16	30

MORTALITY TABLE 6—Continued.

Registration Area.	Age.													
	All Ages	Under 1	1	2	3	4	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39
Foreign,	7,284	12	6	5	7	5	35	23	22	86	185	241	290	379
Males,	3,743	5	4	2	1	4	16	11	10	49	99	136	155	224
Females,	3,541	7	2	3	6	1	19	12	12	37	86	105	135	155
Unknown,	287	8	2	1	-------	1	12	-------	-------	2	4	9	16	23
Males,	205	4	-------	1	-------	-------	5	-------	-------	1	3	7	12	20
Females,	82	4	2	-------	-------	1	7	-------	-------	1	1	2	4	3
Colored,	2,270	372	109	43	22	8	554	40	34	72	112	150	155	204
Males,	1,194	201	54	22	10	2	289	19	16	32	47	81	94	129
Females,	1,076	171	55	21	12	6	265	21	18	40	65	69	61	75
Negro, (M.	1,173	201	54	22	10	2	289	19	16	32	46	80	93	126
Negro, (F.	1,075	171	55	21	12	6	265	21	18	40	65	69	60	75
Indian, (M.	1	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	1	-------
Indian, (F.	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Chinese, (M.	18	-------	-------	-------	-------	-------	-------	-------	-------	-------	1	-------	-------	2
Chinese, (F.	1	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	1	-------
Japanese, (M.	2	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	1	-------	1
Japanese, (F.	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Other colored, (M.	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Other colored, (F.	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------
Pittsburgh.														
Total,	8,728	1,765	396	146	86	82	2,475	240	132	214	342	386	421	455
Males,	4,886	1,061	217	74	47	46	1,445	133	72	103	194	224	245	279
Females,	3,842	704	179	72	39	36	1,030	107	60	111	148	162	176	176

White,	8,197	1,670	370	141	77	79	2,337	216	122	200	318	357	385	422
Males,	4,605	1,006	203	73	42	45	1,369	124	65	100	181	210	222	262
Females,	3,592	664	167	68	35	34	968	92	57	100	137	147	163	160
Native,	5,530	1,656	368	139	76	76	2,315	209	110	162	231	225	243	225
Males,	3,047	997	201	72	41	43	1,354	121	58	81	117	124	132	125
Females,	2,483	659	167	67	35	33	961	88	52	81	114	101	111	100
Both parents native, (M.	1,262	407	70	27	15	19	538	53	22	34	46	59	61	40
(F.	1,037	271	62	22	15	12	382	38	21	31	48	54	52	41
One or both parents foreign, (M.	1,599	562	130	45	26	24	787	65	36	47	66	58	62	74
(F.	1,299	354	104	45	20	21	544	48	31	46	62	42	55	49
Parentage unknown, (M.	186	28	1				29	3			5	7	9	11
(F.	147	34	1				35	2		4	4	5	4	10
Foreign,	2,581	3	2	1	1	3	10	6	12	38	87	125	134	188
Males,	1,490	2	2		1	2	7	2	7	19	64	79	83	129
Females,	1,091	1		1		1	3	4	5	19	23	46	51	59
Unknown,	86	11		1			12	1				7	8	9
Males,	68	7		1			8	1				7	7	8
Females,	18	4					4						1	1
Colored,	531	95	26	5	9	3	138	24	10	14	24	29	36	33
Males,	281	55	14	1	5	1	76	9	7	3	13	14	23	17
Females,	250	40	12	4	4	2	62	15	3	11	11	15	13	16
Negro, (M.	279	55	14	1	5	1	76	9	7	3	13	14	23	17
(F.	250	40	12	4	4	2	62	15	3	11	11	15	13	16
Indian, (M.														
(F.														
Chinese, (M.	2													
(F.														
Japanese, (M.														
(F.														
Other colored, (M.														
(F.														

MORTALITY TABLE 6—Continued.

Registration Area.	Age.													
	All Ages	Under 1	1	2	3	4	Under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39
Scranton.														
Total,	2,114	474	91	37	23	12	637	57	33	59	70	89	78	95
Males,	1,135	248	48	28	15	6	345	29	13	34	34	44	47	51
Females,	979	226	43	9	8	6	292	28	20	25	36	45	31	44
White,	2,099	470	91	37	23	12	633	57	32	59	70	87	77	94
Males,	1,130	247	48	28	15	6	344	29	13	34	34	44	47	51
Females,	969	223	43	9	8	6	289	28	19	25	36	43	30	43
Native,	1,352	468	89	35	23	12	627	54	31	48	48	50	36	48
Males,	711	246	46	26	15	6	339	27	13	26	21	23	23	24
Females,	641	222	43	9	8	6	288	27	18	22	27	27	13	24
Both parents native, M.	263	98	13	11	5	3	130	15	6	10	9	9	6	5
Both parents native, F.	247	79	11	6	2	1	99	12	8	8	9	10	1	7
One or both parents foreign, M.	419	146	33	15	10	3	207	12	7	15	12	14	16	17
One or both parents foreign, F.	370	141	32	3	6	5	187	15	10	14	17	17	12	16
Parentage unknown, M.	29	2					2			1			1	2
Parentage unknown, F.	24	2					2				1			1
Foreign,	737	2	2	2			6	3	1	11	20	36	41	46
Males,	410	1	2	2			5	2		8	11	20	24	27
Females,	327	1					1	1	1	3	9	16	17	19

Unknown,	10										2	1		
Males,	9										2	1		
Females,	1													
Colored,	15	4					4		1			2	1	1
Males,	5	1					1							
Females,	10	3					3		1			2	1	1
Negro, {M.	5	1					1							
{F.	10	3					3		1			2	1	1
Indian, {M.														
{F.														
Chinese, {M.														
{F.														
Japanese, {M.														
{F.														
Other colored, {M.														
{F.														

MORTALITY TABLE 6—Continued.

Registration Area.	Age.													
	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 to 89	90 to 94	95 to 99	100 and over	Unknown
Entire State.														
Total,	4,874	5,200	5,719	6,333	7,030	7,776	8,080	6,927	4,837	2,494	787	153	37	5
Males,	2,836	3,082	3,292	3,563	3,877	4,099	3,952	3,240	2,155	1,027	297	50	8	4
Females,	2,038	2,178	2,427	2,770	3,153	3,677	4,128	3,687	2,682	1,467	490	103	29	1
White,	4,529	4,964	5,405	6,081	6,813	7,569	7,918	6,826	4,765	2,455	764	147	30	4
Males,	2,633	2,917	3,121	3,418	3,764	4,003	3,862	3,196	2,127	1,010	291	49	7	3
Females,	1,896	2,047	2,284	2,663	3,059	3,566	4,056	3,630	2,638	1,445	473	98	23	1
Native,	2,987	3,089	3,474	4,144	4,601	5,038	5,374	4,853	3,367	1,718	513	102	14	1
Males,	1,607	1,655	1,851	2,258	2,452	2,629	2,606	2,274	1,483	697	183	30	4	
Females,	1,380	1,434	1,623	1,886	2,149	2,409	2,768	2,579	1,884	1,021	330	72	10	1
Both parents native, (M.	863	896	975	1,275	1,532	1,745	1,773	1,578	1,015	473	115	18	3	
Both parents native, (F.	819	858	955	1,105	1,405	1,709	1,925	1,831	1,287	712	233	49	4	1
One or both parents foreign, (M.	583	571	631	682	572	468	355	298	172	68	17	3		
One or both parents foreign, (F.	436	463	511	573	506	390	415	349	247	103	36	9	1	
Parentage unknown, (M.	161	188	245	301	348	416	478	398	296	156	51	9	1	
Parentage unknown, (F.	125	113	157	208	238	310	428	399	350	206	61	14	5	
Foreign,	1,447	1,780	1,850	1,872	2,110	2,460	2,468	1,921	1,356	719	244	45	15	2
Males,	948	1,187	1,196	1,102	1,223	1,323	1,209	891	622	306	107	19	3	2
Females,	499	593	654	770	887	1,137	1,259	1,030	734	413	137	26	12	

Unknown,	95	95	81	65	102	71	76	52	42	18	7	.....	1	1
Males,	78	75	74	58	79	51	47	31	22	7	1	.....	.....	1
Females,	17	20	7	7	23	20	29	21	20	11	6	.....	1	.....
Colored,	345	296	314	252	217	207	162	101	72	39	23	6	7	1
Males,	203	165	171	145	123	96	90	44	28	17	6	1	1	1
Females,	142	131	143	107	94	111	72	57	44	22	17	5	6	.....
Negro, {M.	202	159	167	140	122	95	90	44	28	17	6	1	1	1
Negro, {F.	142	131	143	107	94	111	72	57	44	22	17	5	6	.....
Indian, {M.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Indian, {F.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chinese, {M.	1	6	4	5	1	1	.....	.....	.....	.....	.....	.....	.....	.....
Chinese, {F.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Japanese, {M.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Japanese, {F.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Other colored, {M.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Other colored, {F.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Philadelphia.														
Total,	1,416	1,493	1,698	1,731	1,905	1,835	1,777	1,408	929	486	172	27	10	.....
Males,	803	865	953	933	1,026	927	833	586	394	168	62	6	2	.....
Females,	613	628	745	798	879	908	944	822	535	318	110	21	8	.....
White,	1,234	1,329	1,531	1,622	1,800	1,756	1,714	1,374	907	473	164	26	8	.....
Males,	701	767	870	875	970	894	800	575	388	164	59	6	2	.....
Females,	533	562	661	747	830	862	914	799	519	309	105	20	6	.....
Native,	779	777	910	965	984	893	878	718	451	247	76	15	1	.....
Males,	431	435	515	527	524	469	398	295	177	77	21	2	.....	.....
Females,	348	342	395	438	460	424	480	423	274	170	55	13	1	.....
Both parents native, {M.	162	182	197	220	239	249	206	181	108	46	13	1	.....	.....
Both parents native, {F.	146	144	145	179	212	244	257	271	168	108	34	7	1	.....
One or both parents foreign, {M.	212	181	232	213	181	120	87	56	22	14	2	.....	.....	.....
One or both parents foreign, {F.	154	162	200	204	175	117	129	80	52	24	8	2	.....	.....
Parentage unknown, {M.	57	72	86	94	104	100	105	58	47	17	6	1	.....	.....
Parentage unknown, {F.	48	36	50	55	73	63	94	72	54	38	13	4	.....	.....

MORTALITY TABLE 6—Continued.

Registration Area.	Age.													
	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 to 89	90 to 94	95 to 99	100 and over	Unknown
Foreign	419	524	600	634	782	841	816	639	445	221	85	11	6	
Males	241	314	337	326	422	408	388	271	205	87	38	4	2	
Females	178	210	263	308	360	433	428	368	240	134	47	7	4	
Unknown	36	28	21	23	34	22	20	17	11	5	3		1	
Males	29	18	18	22	24	17	14	9	6					
Females	7	10	3	1	10	5	6	8	5	5	3		1	
Colored	182	164	167	109	105	79	63	34	22	13	8	1	2	
Males	102	98	83	58	56	33	33	11	6	4	3			
Females	80	66	84	51	49	46	30	23	16	9	5	1	2	
Negro (M.)	102	93	80	53	55	32	33	11	6	4	3			
Negro (F.)	80	66	84	51	49	46	30	23	16	9	5	1	2	
Indian (M.)														
Indian (F.)														
Chinese (M.)		5	3	5	1	1								
Chinese (F.)														
Japanese (M.)														
Japanese (F.)														
Other colored (M.)														
Other colored (F.)														
Pittsburgh.														
Total	458	469	474	505	506	521	443	324	220	109	25	7	2	
Males	272	276	271	295	309	288	208	140	85	35	8	4		
Females	186	193	203	210	197	233	235	184	135	74	17	3	2	

White	421	432	438	471	485	498	429	315	216	105	23	7		
Males	250	258	250	277	297	276	201	136	84	33	6	4		
Females	171	174	188	194	188	222	228	179	132	72	17	3		
Native	255	215	212	239	239	216	165	139	88	35	5	2		
Males	139	115	102	132	139	129	79	61	26	11	1	1		
Females	116	100	110	107	100	87	86	78	62	24	4	1		
Both parents native, M.	60	43	36	45	63	63	50	29	13	5	1	1		
Both parents native, F.	46	42	37	41	38	50	40	43	22	9	1	1		
One or both parents foreign, M.	72	59	55	68	58	46	17	20	6	3				
One or both parents foreign, F.	61	53	63	58	50	30	37	27	31	10	2			
Parentage unknown, M.	7	13	11	19	18	20	12	12	7	3				
Parentage unknown, F.	9	5	10	8	12	7	9	8	9	5	1			
Foreign	162	207	218	226	236	276	260	175	128	70	18	5		
Males	108	137	141	142	149	142	118	75	58	22	5	3		
Females	54	70	77	84	87	134	142	100	70	48	13	2		
Unknown	4	10	8	6	10	6	4	1						
Males	3	6	7	3	9	5	4							
Females	1	4	1	3	1	1		1						
Colored	37	37	36	34	21	23	14	9	4	4	2		2	
Males	22	18	21	18	12	12	7	4	1	2	2			
Females	15	19	15	16	9	11	7	5	3	2			2	
Negro, M.	22	17	20	18	12	12	7	4	1	2	2			
Negro, F.	15	19	15	16	9	11	7	5	3	2			2	
Indian, M.														
Indian, F.														
Chinese, M.		1	1											
Chinese, F.														
Japanese, M.														
Japanese, F.														
Other colored, M.														
Other colored, F.														

MORTALITY TABLE 6—Continued.

Registration Area.	Age.													
	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 to 89	90 to 94	95 to 99	100 and over	Unknown
Scranton.														
Total,	123	122	112	127	132	130	89	72	52	22	13	2		
Males,	82	75	69	75	66	72	43	28	17	8	3			
Females,	41	47	43	52	66	58	46	44	35	14	10	2		
White,	121	122	111	126	130	130	89	72	52	22	13	2		
Males,	80	75	68	74	66	72	43	28	17	8	3			
Females,	41	47	43	52	64	58	46	44	35	14	10	2		
Native,	64	58	54	57	53	40	25	18	27	8	6			
Males,	35	33	34	33	26	23	10	10	7	3	1			
Females,	29	25	20	24	27	17	15	8	20	5	5			
Both parents native, M.	7	5	13	10	8	11	8	4	4	3				
Both parents native, F.	16	4	8	11	14	5	8	4	14	5	4			
One or both parents foreign, M.	26	27	17	22	13	8		4	2					
One or both parents foreign, F.	13	17	11	11	12	9	5	3	1					
Parentage unknown, M.	2	1	4	1	5	4	2	2	1		1			
Parentage unknown, F.		4	1	2	1	3	2	1	5		1			
Foreign,	56	63	54	69	77	90	63	53	25	14	7	2		
Males,	44	41	31	41	40	49	32	18	10	5	2			
Females,	12	22	23	28	37	41	31	35	15	9	5	2		

Unknown,	1	1	3				1	1						
Males,	1	1	3				1							
Females,								1						
Colored,	2		1	1	2									
Males,	2		1	1										
Females,					2									
Negro, M.	2		1	1										
Negro, F.					2									
Indian, M.														
Indian, F.														
Chinese, M.														
Chinese, F.														
Japanese, M.														
Japanese, F.														
Other colored, M.														
Other colored, F.														

MORTALITY TABLE 7.

Deaths in the entire State and for municipalities having more than 100,000 population, from certain causes, by months and color. (Still-births excluded.)

Abridged International List Number.	Cause of Death.	Total.	Month of Death.											
			Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
	PENNSYLVANIA.													
	All Causes.*	115,284	9,704	9,503	11,383	11,355	8,863	8,001	8,467	9,180	9,243	9,074	8,875	11,633
1	Typhoid fever,	1,034	76	59	55	60	49	62	50	83	134	160	116	130
3	Malaria,	34	2	3	3	1	2		4	3	4	8	1	3
5	Measles,	565	42	46	54	81	63	46	51	15	16	17	28	103
6	Scarlet fever,	301	37	43	31	41	36	22	17	9	11	16	15	23
7	Whooping cough,	573	36	54	53	54	64	37	51	39	38	39	48	60
8	Diphtheria and croup,	1,632	180	137	134	123	121	91	74	71	109	180	200	212
9	Influenza,	1,463	106	116	282	361	86	27	12	10	17	29	41	382
'13	Tuberculosis of the lungs,†	9,271	804	827	898	951	903	714	753	687	636	672	683	753
14-15	Other forms of tuberculosis,	1,367	110	103	136	172	110	124	104	98	117	100	83	110
17	Meningitis,	535	43	48	58	36	38	33	48	61	44	53	36	37
20-21	Bronchitis,	1,603	214	180	229	221	112	74	56	48	65	89	122	193
22	Pneumonia (lobar and unqualified),	7,096	639	725	1,002	1,111	431	310	190	163	203	379	554	1,263
(23)	Bronchopneumonia,	5,429	631	641	931	791	372	235	165	153	187	263	359	701
25	Diarrhoea and enteritis (under 2 years),	7,603	251	285	294	339	263	340	1,075	1,778	1,571	813	329	265
(37)	Diarrhoea and enteritis (2 years and over),	1,047	51	61	56	46	61	77	123	187	170	93	64	58
(33)	Congenital debility,‡	1,970	115	113	134	147	103	123	160	237	291	238	175	134
35	Violent deaths (excluding suicide),	7,766	593	535	573	695	599	674	728	711	695	630	637	756
36	Suicide,	1,081	79	100	128	103	91	104	100	77	79	76	73	71
	All other causes,	65,004	5,671	5,427	6,332	6,112	5,353	4,908	4,706	4,747	4,859	5,199	5,311	6,376
	PHILADELPHIA (Total).													
	All Causes,*	26 291	2,303	2,055	2,452	2,572	2,056	1,817	1,918	1,884	1,933	1,931	1,984	3,383
1	Typhoid fever,	114	5	4	6	12	2	7	7	8	10	20	12	21
3	Malaria,	3			1	1			1					
5	Measles,	190	13	7	23	38	39	25	26	5	6	4	2	2

6	Scarlet fever,	27	4	4	3	3	7	2	1			1	1	1
7	Whooping cough,	43	2	2	1	3	5	3	6	2	5	3	3	8
8	Diphtheria and croup,	320	37	37	23	31	27	23	15	6	19	20	33	49
9	Influenza,	346	21	20	23	46	13	1	2	1		2	6	211
13	Tuberculosis of the lungs,†	2,767	248	233	261	278	242	198	226	218	202	206	206	249
14-15	Other forms of tuberculosis,	365	28	26	36	52	33	33	40	20	24	26	16	31
17	Meningitis,	78	6	7	6	5	1	2	10	12	9	8	3	9
20-21	Bronchitis,	371	38	41	42	45	30	20	14	8	16	19	24	74
22	Pneumonia (lobar and unqualified),	1,635	150	151	196	262	85	62	29	26	33	59	106	476
(23)	Bronchopneumonia,	1,228	144	96	135	167	100	64	42	43	49	57	82	249
25	Diarrhoea and enteritis (under 2 years),	1,515	52	45	65	72	60	75	256	346	272	142	83	46
(37)	Diarrhoea and enteritis (2 years and over),	186	10	14	9	9	10	17	22	32	29	11	10	13
(33)	Congenital debility,‡	242	16	15	13	18	16	11	19	31	33	28	25	17
35	Violent deaths (excluding suicide),	1,190	113	75	105	85	95	107	110	101	101	95	86	117
36	Suicide,	280	25	23	36	22	18	29	22	21	23	22	20	19
	All other causes,	15,391	1,394	1,255	1,467	1,423	1,273	1,138	1,070	1,004	1,102	1,208	1,263	1,791
	PHILADELPHIA (WHITE).													
	All Causes,*	24,021	2,107	1,892	2,224	2,330	1,865	1,647	1,752	1,708	1,774	1,776	1,816	3,129
1	Typhoid fever,	107	4	4	5	12	2	7	7	7	8	19	12	20
3	Malaria,	3		1	1	1			1					
5	Measles,	175	13	6	23	33	36	25	21	4	6	4	2	2
6	Scarlet fever,	25	4	4	3	2	7	1	1			1	1	1
7	Whooping cough,	31	2	2	1	1	2	2	6	2	4	2	1	6
8	Diphtheria and croup,	308	34	35	23	31	26	22	14	5	19	19	31	49
9	Influenza,	318	19	18	22	44	11	1	2	1		2	5	193
13	Tuberculosis of the lungs,†	2,328	215	196	218	232	208	170	191	181	167	176	167	207
14-15	Other forms of tuberculosis,	306	24	23	32	40	29	30	33	14	20	20	16	26
17	Meningitis,	75	6	7	4	5	1	2	10	11	9	8	3	9
20-21	Bronchitis,	330	36	38	39	38	25	17	14	7	16	15	19	63
22	Pneumonia (lobar and unqualified),	1,470	130	140	165	232	72	56	23	24	30	56	99	443
(23)	Bronchopneumonia,	1,097	132	85	116	148	92	56	39	39	43	48	73	226
25	Diarrhoea and enteritis (under 2 years),	1,415	47	43	63	66	58	69	243	318	253	132	82	41
(37)	Diarrhoea and enteritis (2 years and over),	168	8	12	9	8	8	14	20	29	27	11	10	12
(33)	Congenital debility,‡	212	13	13	12	16	13	9	15	27	29	27	22	16
35	Violent deaths (excluding suicide),	1,106	107	71	99	77	92	101	99	95	96	86	77	106
36	Suicide,	273	24	22	35	22	18	29	22	20	23	21	20	17
	All other causes,	14,274	1,289	1,173	1,354	1,322	1,165	1,036	993	924	1,024	1,129	1,176	1,689
	PHILADELPHIA (COLORED).													
	All Causes,*	2,270	199	163	228	242	191	170	165	176	159	155	168	254
1	Typhoid fever,	7	1		1					1	2	1		1
3	Malaria,													

MORTALITY TABLE 7—Continued.

Abridged International List Number.	Cause of Death.	Total.	Month of Death.											
			Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
5	Measles,	15		1		5	3		5	1				
6	Scarlet fever,	2				1		1						
7	Whooping cough,	12				2	3	1			1	1	2	2
8	Diphtheria and croup,	12	3	2			1	1	1	1		1	2	
9	Influenza,	28	2	2	1	2	2						1	18
13	Tuberculosis of the lungs,*	439	33	37	43	46	34	28	35	37	35	30	39	42
14-15	Other forms of tuberculosis,	59	4	3	4	12	4	3	8	6	4	6		5
17	Meningitis,	3			2					1				
20-21	Bronchitis,	41	2	3	3	7	5	3		1		4	5	8
22	Pneumonia (lobar and unqualified),	165	20	11	31	30	13	6	6	2	3	3	7	33
(23)	Bronchopneumonia,	131	12	11	19	19	8	8	3	4	6	9	9	23
25	Diarrhoea and enteritis (under 2 years),	100	5	2	3	6	2	6	13	28	19	10	1	5
(37)	Diarrhoea and enteritis (2 years and over),	18	2	2		1	2	3	2	3	2			1
(33)	Congenital debility,†	30	3	2	1	2	3	2	4	4	4	1	3	1
35	Violent deaths (excluding suicide),	84	6	4	6	8	3	6	11	6	5	9	9	11
36	Suicide,	7	1	1	1					1		1		2
	All other causes,	1,117	105	82	113	101	108	102	77	80	78	79	90	102
	PITTSBURGH (Total).													
	All Causes,*	8,728	691	671	855	880	678	643	651	684	644	714	684	933
1	Typhoid fever,	59	5	5	5	3	5	4	4	2	8	5	8	5
3	Malaria,	3										2		1
5	Measles,	74	5	7	5	11	5	7	9	2	4		8	11
6	Scarlet fever,	55	8	6	5	10	5	5	6	1	2	2	2	3
7	Whooping cough,	45	2			2	11	2	7	3	5	3	5	5
8	Diphtheria and croup,	154	18	11	10	16	15	7	8	8	6	10	28	17
9	Influenza,	60	4	2	11	16	6				1	3	3	14
13	Tuberculosis of the lungs,†	620	48	48	57	63	63	55	48	53	37	45	58	45
14-15	Other forms of tuberculosis,	141	7	11	10	12	12	21	15	13	13	13	4	10
17	Meningitis,	45	3	3	8	1	5		7	6	2	6	3	1
20-21	Bronchitis,	141	26	13	17	20	9	7	3	7	5	8	10	16
22	Pneumonia (lobar and unqualified),	844	58	78	102	133	72	41	32	25	39	44	69	151
(23)	Bronchopneumonia,	560	58	59	79	66	38	34	24	18	28	39	40	77

25	Diarrhoea and enteritis (under 2 years),	558	24	22	20	22	22	27	87	138	80	55	31	30
(37)	Diarrhoea and enteritis (2 years and over),	73	4	2	2	3	5	6	11	9	12	8	5	6
(33)	Congenital debility,†	98	3	3	6	10	7	1	11	14	15	15	8	5
35	Violent deaths (excluding suicide),	628	42	43	54	46	51	56	56	57	44	65	46	68
36	Suicide,	88	10	10	7	8	8	8	5	4	7	5	6	10
	All other causes,	4,482	365	348	457	438	339	362	318	324	336	386	350	458
	PITTSBURGH (WHITE).													
	All Causes,*	8,197	653	633	787	830	628	608	613	638	609	675	647	876
1	Typhoid fever,	54	5	5	4	2	4	4	4	2	7	5	7	5
3	Malaria,	3										2		1
5	Measles,	71	5	7	3	11	5	6	9	2	4		8	11
6	Scarlet fever,	53	7	6	5	10	5	5	5	1	2	2	2	3
7	Whooping cough,	42	2			2	10	2	7	2	5	3	4	5
8	Diphtheria and croup,	150	18	11	10	16	15	7	7	6	6	10	28	16
9	Influenza,	54	4	2	9	15	6				1	3	2	12
13	Tuberculosis of the lungs,†	546	42	45	52	55	52	46	46	46	31	40	51	40
14-15	Other forms of tuberculosis,	129	5	10	9	12	10	20	14	11	12	12	4	10
17	Meningitis,	43	3	3	8	1	5		7	6	2	4	3	1
20-21	Bronchitis,	137	25	13	15	20	8	7	3	7	5	8	10	16
22	Pneumonia (lobar and unqualified),	775	54	71	96	120	69	35	29	19	37	42	63	140
(23)	Bronchopneumonia,	527	55	52	73	65	35	34	22	16	26	38	37	74
25	Diarrhoea and enteritis (under 2 years),	534	23	20	20	29	18	26	83	137	76	54	27	30
(37)	Diarrhoea and enteritis (2 years and over),	65	4	2	1	3	4	5	10	7	11	8	5	6
(33)	Congenital debility,†	88	3	3	4	10	7	1	10	13	14	12	7	1
35	Violent deaths (excluding suicide),	597	41	42	47	44	47	53	52	54	40	64	46	67
36	Suicide,	87	10	9	7	8	8	8	5	4	7	5	6	10
	All other causes,	4,241	347	332	424	416	320	349	300	305	323	363	337	425
	PITTSBURGH (COLORED).													
	All Causes,*	531	38	38	68	50	50	35	38	46	35	39	37	57
1	Typhoid fever,	5			1	1	1				1		1	
3	Malaria,													
5	Measles,	3			2			1						
6	Scarlet fever,	2	1						1					
7	Whoping cough,	3					1			1			1	
8	Diphtheria and croup,	4							1	2				1
9	Influenza,	6			2	1							1	2
13	Tuberculosis of the lungs,†	74	6	3	5	8	11	9	2	7	6	5	7	5
14-15	Other forms of tuberculosis,	12	2	1	1		2	1	1	2	1	1		
17	Meningitis,	2										2		
20-21	Bronchitis,	4	1		2		1							
22	Pneumonia (lobar and unqualified),	69	4	7	6	13	3	6	3	6	2	2	6	11
(23)	Bronchopneumonia,	33	3	7	6	1	3		2	2	2	1	3	3

MORTALITY TABLE 7—Continued.

Abridged International List Number.	Cause of Death.	Total.	Month of Death.											
			Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
25	Diarrhoea and enteritis (under 2 years),	24	1	2		2	4	1	4	1	4	1	4	
(37)	Diarrhoea and enteritis (2 years and over),	7			1		1	1	1	2	1			
(33)	Congenital debility,‡	10			2				1	1	1	3	1	1
35	Violent deaths (excluding suicide),	31	1	1	7	2	4	3	4	3	4	1		1
36	Suicide,	1		1										
	All other causes,	241	19	16	33	22	19	13	18	19	13	23	13	33
	SCRANTON.													
	All Causes,*	2,114	202	174	205	203	155	138	191	189	173	171	149	161
1	Typhoid fever,	18	2	1	2		1	1		1	3	3	2	2
3	Malaria,													
5	Measles,	8		1		2		1	1		3			
6	Scarlet fever,	4		1						1			1	1
7	Whooping cough,	5	1	2		1	1							
8	Diphtheria and croup,	40	3	6	2	6	1	1	1	1	3	5	7	4
9	Influenza,	13	3	1	3		2	1						3
13	Tuberculosis of the lungs,†	104	10	9	9	12	9	13	5	6	8	7	11	5
14-15	Other forms of tuberculosis,	30	3		7	6	1	3	1	3	1	2	1	2
17	Meningitis,	11		1	1	2			4	2			1	
20-21	Bronchitis,	44	11	3	8	2	5	1	5	3	1	3	2	
22	Pneumonia (lobar and unqualified),	160	17	14	17	33	16	9	11	5	11	4	6	17
(23)	Bronchopneumonia,	127	24	14	15	19	9	5	5	7	7	9	7	6
25	Diarrhoea and enteritis (under 2 years),	197	8	6	4	2	3	13	51	35	40	20	8	7
(37)	Diarrhoea and enteritis (2 years and over),	22	1	1	1	1	3	1	3	7	2			2
(33)	Congential debility,‡	25	1	5	5		3	2	1	2	1	4		1
35	Violent deaths (excluding suicide),	188	13	14	17	12	17	20	16	19	16	19	16	9
36	Suicide,	24	2	5	1	2		4		2	2	3	2	1
	All other causes,	1,094	103	90	113	106	84	63	87	95	75	92	85	101

*Exclusive of stillbirths. †Including "acute miliary tuberculosis."
‡Excluding "premature birth."

MORTALITY TABLE 8.

Deaths in the entire State and in cities having more than 100,000 population, from certain causes and by color, by days, weeks and months for the first year of life. (Stillbirths excluded.)

Abridged International List Number.	Cause of Death.	Age, Under 1 Year, in Completed Days, Weeks, or Months.													
			Days.				Weeks.				Months.					
		Under 1 Year	Under 1	1	2	3 to 6	Under 1	1	2	3*	Under 1	1	2	3 to 5	6 to 8	9 to 11
	AREA, ENTIRE STATE.															
	All Causes,	23,933	3,264	1,128	773	1,628	6,793	1,466	1,193	924	10,376	2,163	1,864	4,269	3,058	2,220
5	Measles,	178								5	5	6	11	29	45	82
6	Scarlet fever,	24							1	1	2	1	1	6	6	8
7	Whooping cough,	322		1	1		2	2	7	11	22	40	40	88	62	70
8	Diphtheria and croup,	132		1		1	2		6	1	9	7	6	22	34	54
9	Influenza,	146	1	1		1	3	7	9	5	24	20	17	45	21	19
(12)	Dysentery,	42							2	3	5	5	5	13	5	9
(12)	Erysipelas,	97				1	1	3	14	12	30	17	9	19	19	3
(37)	Tetanus,	14				6	6	4	1		11	1	1			1
13	Tuberculosis of the lungs,	120			1		1	2	5		8	13	12	36	31	20
14	Tuberculous meningitis,	149						1	2		3	4	9	36	45	43
15	Other forms of tuberculosis,	79				1	1	3	1	3	8	5	10	24	19	13
(37)	Syphilis,	262	16	15	10	16	57	29	25	12	23	38	43	41	8	9
17	Meningitis,	186		1	2	13	16	5	2	6	29	15	17	45	43	37
(37)	Convulsions,	555	12	31	34	70	147	48	40	21	256	83	58	80	42	36
19	Organic diseases of the heart,	135	2		6	17	25	13	14	11	63	12	11	22	13	14
20	Acute bronchitis,	530	2	7	2	15	26	24	36	52	120	84	53	135	98	40
22	Pneumonia,	1,073	4	4	7	23	38	50	44	50	182	124	103	287	211	166
(23)	Bronchopneumonia,	2,379	2	13	21	68	104	97	121	97	419	276	234	587	483	380
24	Diseases of the stomach,	405	2	5	3	19	29	29	35	26	119	66	49	93	52	26
25	Diarrhoea and enteritis,	6,253	5	12	12	86	115	176	227	242	760	673	715	1,840	1,375	890
(33)	Malformations,	1,579	334	193	142	264	933	179	100	64	1,276	95	64	85	44	15
(33)	Premature birth,	4,138	2,061	536	279	420	3,296	370	202	107	3,975	95	27	33	7	1

MORTALITY TABLE 8—Continued.

Abridged International List Number.	Cause of Death.	Age, Under 1 Year, in Completed Days, Weeks, or Months.													
			Days.				Weeks.				Months.					
		Under 1 Year	Under 1	1	2	3 to 6	Under 1	1	2	3*	Under 1	1	2	3 to 5	6 to 8	9 to 11
(33, 37)	Congenital debility,	2,635	372	167	124	328	991	248	174	127	1,540	303	220	374	132	66
(37)	Injuries at birth,	797	397	108	78	141	724	46	21	2	793	1	3			
35	External causes,	243	12	6	6	16	40	10	6	14	70	22	29	42	40	40
38	Ill defined and unknown,	166	16	10	14	17	57	10	11	7	85	14	14	21	18	14
	All other causes,	1,303	26	17	31	105	179	110	87	63	439	146	103	266	205	144
	AREA, PHILADELPHIA (TOTAL).															
	All Causes,	4,233	504	175	158	242	1,079	256	203	153	1,691	351	303	790	637	461
5	Measles,	55								2	2	2	2	9	16	24
6	Scarlet fever,	1												1		
7	Whooping cough,	20		1			1				1	2	2	6	5	4
8	Diphtheria and croup,	27								1	1	1	2	6	10	7
9	Influenza,	13							1	1	2	4		4	1	2
(12)	Dysentery,	5											2	3		
(12)	Erysipelas,	16							3	3	6	2	1	4	2	1
(37)	Tetanus,	2				1	1	1			2					
13	Tuberculosis of the lungs,	24						1	2		3	2	2	5	5	7
14	Tuberculous meningitis,	52						1			1		2	11	21	17
15	Other forms of tuberculosis,	12										1	4	3	4	
(37)	Syphilis,	79	6	9	1	3	19	9	9	3	40	4	15	17	3	
17	Meningitis,	21			1	1	2	1		1	4	1	1	3	7	5
(37)	Convulsions,	54	2	3	3	3	11	7	5	1	24	8	7	6	4	5
19	Organic diseases of the heart,	22			1	1	2	1	1	1	5	2	2	7	3	3
20	Acute bronchitis,	103	1	1		1	3	2	7	4	16	14	8	32	26	7
22	Pneumonia,	129			2	3	5	6	8	4	23	7	6	34	28	31
(23)	Bronchopneumonia,	429		3	4	8	15	12	17	18	62	44	27	99	106	91

24	Diseases of the stomach,	41			1	2	3	3	3	2	11	5	5	14	4	2
25	Diarrhoea and enteritis,	1,268		5	2	15	22	33	36	43	134	138	141	369	292	194
(33)	Malformations,	317	42	38	29	46	155	41	24	11	231	39	16	26	10	4
(33)	Premature birth,	750	325	84	66	81	556	69	42	33	700	26	6	16	2	
(33, 37)	Congenital debility,	341	52	15	19	39	125	38	18	12	193	29	28	48	30	13
(37)	Injuries at birth,	145	72	10	17	24	123	12	8	1	144		1			
35	External causes,	47		1	3		5	2		1	8	7	4	10	10	8
38	Ill defined and unknown,	2				1	1				1			1		
	All other causes,	258	4	5	9	12	30	17	19	11	77	22	19	56	48	36
	AREA, PHILADELPHIA (WHITE).															
	All Causes,	3,861	461	162	141	222	986	240	191	145	1,562	320	283	713	575	408
5	Measles,	50								2	2	2	2	9	12	23
6	Scarlet fever,															
7	Whooping cough,	16		1			1				1	2	2	5	5	1
8	Diphtheria and croup,	25								1	1	1	2	6	9	6
9	Influenza,	12							1	1	2	3		4	1	2
(12)	Dysentery,	4											1	3		
(12)	Erysipelas,	16							3	3	6	2	1	4	2	1
(37)	Tetanus,	2				1	1	1			2					
13	Tuberculosis of the lungs,	20						1	2		3	2	2	4	4	5
14	Tuberculous meningitis,	45						1			1		1	9	19	15
15	Other forms of tuberculosis,	11										1	3	3	4	
(37)	Syphilis,	61	3	7	1	3	14	5	6	3	28	3	15	12	3	
17	Meningitis,	20		1	1	1	2	1		1	4	1	1	3	6	5
(37)	Convulsions,	51	2	3	3	3	11	7	5	1	24	8	7	5	4	3
19	Organic diseases of the heart,	22			1	1	2	1	1	1	5	2	2	7	3	3
20	Acute bronchitis,	89	1	1		1	3	2	7	4	16	12	4	27	24	6
22	Pneumonia,	116			2	3	5	6	8	4	23	7	5	30	25	26
(23)	Bronchopneumonia,	357		3	3	8	14	12	17	16	59	37	25	82	91	83
24	Diseases of the stomach,	35			1	2	3	3	3	2	11	3	5	11	3	2
25	Diarrhoea and enteritis,	1,184		3	1	14	18	31	34	42	125	130	136	348	272	173
(33)	Malformations,	307	40	36	28	46	150	40	24	10	224	28	16	25	10	4
(33)	Premature birth,	687	301	80	59	69	509	64	37	31	641	22	6	16	2	
(33, 37)	Congenital debility,	300	44	13	14	35	106	35	17	10	168	26	27	40	27	12
(37)	Injuries at birth,	139	67	10	17	23	117	12	8	1	138		1			
35	External causes,	43		1	2	1	4	2		1	7	7	4	8	10	7
38	Ill defined and unknown,	2				1	1				1			1		
	All other causes,	227	3	4	8	10	25	16	18	11	70	21	15	51	39	31

MORTALITY TABLE 8—Continued.

Abridged International List Number.	Cause of Death.	Age, Under 1 Year, in Completed Days, Weeks, or Months.													
		Under 1 Year	Days.				Weeks.				Months.					
			Under 1	1	2	3 to 6	Under 1	1	2	3*	Under 1	1	2	3 to 5	6 to 8	9 to 11
	AREA, PHILADELPHIA (COLORED).															
	All Causes,	372	43	13	17	20	93	16	12	8	129	31	20	77	62	53
5	Measles,														4	1
6	Scarlet fever,	1												1		1
7	Whooping cough,	4												1		3
8	Diphtheria and croup,	2													1	1
9	Influenza,	1										1				
(12)	Dysentery,	1											1			
(12)	Erysipelas,															
(37)	Tetanus,															
13	Tuberculosis of the lungs,	4												1	1	2
14	Tuberculous meningitis,	7											1	2	2	2
15	Other forms of tuberculosis,	1											1			
(37)	Syphilis,	18	3	2			5	4	3		12	1		5		
17	Meningitis,	1													1	
(37)	Convulsions,	3												1		2
19	Organic diseases of the heart,															
20	Acute bronchitis,	14										2	4	5	2	1
22	Pneumonia,	13											1	4	3	5
(23)	Bronchopneumonia,	52			1		1			2	3	7	2	17	15	8
24	Diseases of the stomach,	6										2		3	1	
25	Diarrhoea and enteritis,	84		2	1	1	4	2	2	1	9	8	5	21	20	21
(33)	Malformations,	10	2	2	1		5	1		1	7	2		1		
(33)	Premature birth,	63	24	4	7	12	47	5	5	2	59	4				
(33, 37)	Congenital debility,	41	8	2	5	4	19	3	1	2	25	3	1	8	3	1
(37)	Injuries at birth,	6	5			1	6				6					

35	External causes,	4				1		1				1			2		1
38	Ill defined and unknown,																
	All other causes,	31	1	1	1	2	5	1	1		7	1	4	5	9	5
	AREA, PITTSBURGH (TOTAL).															
	All Causes,	1,765	308	91	53	106	558	79	71	47	755	130	143	301	251	185
5	Measles,	23										2	1	2	8	10
6	Scarlet fever,	4												1		3
7	Whooping cough,	19								1	1	4	1	5	3	5
8	Diphtheria and croup,	14							1		1	1		1	6	5
9	Influenza,	3												2		1
(12)	Dysentery,	5							1		1	1	1		1	1
(12)	Erysipelas,	6							1		1	1		2	1	1
(37)	Tetanus,															
13	Tuberculosis of the lungs,	15										2	2	5	3	3
14	Tuberculous meningitis,	16												5	6	5
15	Other forms of tuberculosis,	3											1			2
(37)	Syphilis,	35	1	2	2	1	6	2	6	2	16	4	6	5		4
17	Meningitis,	14										1	1	5	4	3
(37)	Convulsions,	18	1			5	6	1			7	4	3		2	2
19	Organic diseases of the heart,	6							2		2			1	2	1
20	Acute bronchitis,	35			1	2	3	2	1	2	8	3	1	12	6	5
22	Pneumonia,	46				3	3		1	2	6	5	7	11	7	10
(23)	Bronchopneumonia,	198		2	3	6	11	6	11	4	32	19	23	42	46	36
24	Diseases of the stomach,	21		1		1	2			1	3	3	3	7	4	1
25	Diarrhoea and enteritis,	457	1	1	1	4	7	15	15	15	52	46	59	124	105	71
(33)	Malformations,	103	22	12	10	15	59	8	5	5	77	5	8	7	5	1
(33)	Premature birth,	353	193	41	22	31	287	25	16	10	338	7	3	4	1	
(33, 37)	Congenital debility,	159	37	19	5	13	74	13	3	1	91	12	12	29	13	2
(37)	Injuries at birth,	87	50	12	7	13	82	3	2		87					
35	External causes,	15				2	2		1	1	4		2	3	5	1
38	Ill defined and unknown,	3	1				1				1			1	1	
	All other causes,	107	2	1	2	10	15	4	5	3	27	10	9	27	22	12
	AREA, PITTSBURGH (WHITE).															
	All Causes,	1,670	289	89	46	103	527	74	68	44	713	121	138	281	245	172
5	Measles,	22										2	1	2	8	9
6	Scarlet fever,	4												1		3
7	Whooping cough,	18								1	1	4	1	4	3	5
8	Diphtheria and croup,	14							1		1	1		1	6	5
9	Influenza,	3												2		1
(12)	Dysentery,	5							1		1	1	1		1	1

MORTALITY TABLE 8—Continued.

Abridged International List Number.	Cause of Death.	Age, Under 1 Year, in Completed Days, Weeks, or Months.														
		Under 1 Year	Days.				Weeks.				Months.					
			Under 1	1	2	3 to 6	Under 1	1	2	3*	Under 1	1	2	3 to 5	6 to 8	9 to 11
(12)	Erysipelas,	6							1		1	1		2	1	1
(37)	Tetanus,															
13	Tuberculosis of the lungs,	15										2	2	5	3	3
14	Tuberculous meningitis,	14												4	5	5
15	Other forms of tuberculosis,	2											1			1
(37)	Syphilis,	30		2	1	1	4	2	5	2	13	3	6	5		3
17	Meningitis,	13										1		5	4	3
(37)	Convulsions,	17	1			5	6	1			7	4	3		2	1
19	Organic diseases of the heart,	6							2		2			1	2	1
20	Acute bronchitis,	34			1	2	3	2	1	2	8	3	1	11	6	5
22	Pneumonia,	42				3	3		1	1	5	5	7	10	6	9
(23)	Bronchopneumonia,	186		2	3	6	11	6	10	4	31	17	23	39	45	31
24	Diseases of the stomach,	20		1		1	2			1	3	2	3	7	4	1
25	Diarrhoea and enteritis,	140	1	1	1	4	7	14	15	13	49	42	57	119	103	70
(33)	Malformations,	99	21	12	9	14	56	8	5	5	74	5	8	6	5	1
(33)	Premature birth,	335	185	40	20	29	274	22	15	10	321	6	3	4	1	
(33, 37)	Congenital debility,	145	33	18	3	13	67	13	3	1	84	12	10	24	13	2
(37)	Injuries at birth,	82	46	12	6	13	77	3	2		82					
35	External causes,	15				2	2		1	1	4		2	3	5	1
38	Ill defined and unknown,	3	1				1				1			1	1	
	All other causes,	100	1	1	2	10	14	3	5	3	25	10	9	25	21	10
	AREA, PITTSBURGH (COLORED).															
	All Causes,	95	19	2	7	3	31	5	3	3	42	9	5	20	6	12
5	Measles,	1														1
6	Scarlet fever,															
7	Whooping cough,	1												1		

8	Diphtheria and croup,															
9	Influenza,															
(12)	Dysentery,															
(12)	Erysipelas,															
(37)	Tetanus,															
13	Tuberculosis of the lungs,															
14	Tuberculous meningitis,	2												1	1	
15	Other forms of tuberculosis,	1														1
(37)	Syphilis,	5	1		1		2		1		3	1				1
17	Meningitis,	1											1			
(37)	Convulsions,	1														1
19	Organic diseases of the heart,															
20	Acute bronchitis,	1												1		
22	Pneumonia,	4								1	1			1	1	1
(23)	Bronchopneumonia,	12							1		1	2		3	1	5
24	Diseases of the stomach,	1										1				
25	Diarrhoea and enteritis,	17						1		2	3	4	2	5	2	1
(33)	Malformations,	4	1		1	1	3				3			1		
(33)	Premature birth,	18	8	1	2	2	13	3	1		17	1				
(33, 37)	Congenital debility,	14	4	1	2		7				7		2	5		
(37)	Injuries at birth,	5	4		1		5				5					
35	External causes,															
38	Ill defined and unknown,															
	All other causes,	7	1				1	1			2			2	1	2
	AREA, SCRANTON.															
	All Causes,	474	53	19	18	37	127	17	27	14	185	45	47	81	61	55
5	Measles,															
6	Scarlet fever,															
7	Whooping cough,	3		1		1					1			1		1
8	Diphtheria and croup,	2														2
9	Influenza,	5											1		2	2
(12)	Dysentery,	2							1		1					1
(12)	Erysipelas,	3							1		1	1			1	
(37)	Tetanus,															
13	Tuberculosis of the lungs,	1											1			
14	Tuberculous meningitis,	4													1	3
15	Other forms of tuberculosis,	2												1		1
(37)	Syphilis,	2										1		1		
17	Meningitis,	2												1		1
(37)	Convulsions,	8		1			1		1		2	2	1	1	1	1
19	Organic diseases of the heart,															
20	Acute bronchitis,	16				2	2			2	4	5	1	2	3	1
22	Pneumonia,	14						1	1	1	3	2	1	3	2	3
(23)	Bronchopneumonia,	63		1		3	4	2	6	4	16	7	7	13	13	7
24	Diseases of the stomach,	8						1			1		1	3	1	2

MORTALITY TABLE 8—Continued.

Abridged International List Number.	Cause of Death.	Age, Under 1 Year, in Completed Days, Weeks, or Months.													
		Under 1 Year	Days.				Weeks.				Months.					
			Under 1	1	2	3 to 6	Under 1	1	2	3*	Under 1	1	2	3 to 5	6 to 8	9 to 11
25	Diarrhoea and enteritis,	171	1		2	5	8	3	7	6	24	15	27	47	32	26
(33)	Malformations,	27	7	1	1	7	16	4	1		21	3	3			
(33)	Premature birth,	66	32	10	9	7	58	3	4		65	1				
(33, 37)	Congenital debility,	34	7	4	2	6	19	1	2		22	6	1	4		1
(37)	Injuries at birth,	15	5	2	3	5	15				15					
35	External causes,	5	1				1				1	1			2	1
38	Ill defined and unknown,															
	All other causes,	21				2	2	2	3	1	8	1	3	4	3	2

*Includes deaths of infants aged 21 to 29 days.

MORTALITY TABLE 9.

Deaths in each city having more than 100,000 population, from certain causes, by age and color of decedents. (Stillbirths excluded.)

Abridged International List Number.	Cause of Death.	Age. All Ages	Under 1	1	2	3	4	5 to 9	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80 to 89	90 to 99	100 and over	Unknown
	Philadelphia (Total).																		
	All Causes.	26,291	4,233	919	376	215	146	494	859	1,823	1,339	2,009	3,429	3,740	3,185	1,415	199	10	------
1	Typhoid fever,	114	1	2	------	------	1	5	31	36	24	3	7	------	------	1	------	------	------
2	Typhus fever,	------	------	------	------	------	------	------	------	2	------	------	------	------	1	------	------	------	------
3	Malaria,	3	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
4	Smallpox,	190	55	76	25	17	10	4	1	1	1	------	------	------	------	------	------	------	------
5	Measles,	27	1	9	3	4	1	4	2	2	------	1	------	------	------	------	------	------	------
6	Scarlet fever,	43	20	13	4	2	2	2	------	------	------	------	------	------	------	------	------	------	------
7	Whooping cough,	320	27	71	57	42	23	74	14	2	2	3	2	3	------	------	------	------	------
8	Diphtheria and croup,	346	13	8	2	4	2	2	7	10	17	22	46	77	80	46	9	1	------
9	Influenza,	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------	------
10	Asiatic cholera,	1	------	------	------	------	------	------	------	------	------	------	------	1	------	------	------	------	------
11	Cholera nostras,	102	27	11	7	------	3	3	------	3	10	12	8	8	7	2	1	------	------
12	Other epidemic diseases,	2,767	24	21	8	4	4	16	197	665	695	561	329	175	61	7	------	------	------
13	Tuberculosis of the lungs,*	181	52	20	24	15	4	15	12	6	10	9	4	1	------	------	------	------	------
14	Tuberculous meningitis,	184	12	8	7	4	4	18	23	29	20	25	24	7	1	2	------	------	------
15	Other forms of tuberculosis,	1,549	1	1	1	------	------	3	10	36	113	266	437	384	237	55	5	------	------
16	Cancer and other malignant tumors,	78	21	7	6	1	2	11	15	6	4	2	3	------	------	------	------	------	------
17	Meningitis,	1,168	2	------	2	1	2	1	1	1	32	50	199	334	361	125	17	------	------
18	Cerebral hemorrhage and softening,	3,382	22	2	2	7	4	35	95	125	195	345	492	843	816	350	46	3	------
19	Organic diseases of the heart,	222	103	26	5	2	3	1	2	5	2	7	7	15	16	22	6	------	------
20	Acute bronchitis,	149	3	1	------	------	------	3	------	4	4	12	18	41	31	23	8	1	------
21	Chronic bronchitis,	1,635	129	90	23	16	14	30	60	140	184	234	265	242	149	57	5	------	------
22	Pneumonia,	1,228	129	182	62	25	11	33	16	24	40	46	68	116	113	56	6	1	------
23a	Bronchopneumonia,	277	31	9	5	4	2	4	6	18	23	42	41	41	25	24	3	------	------
23b	Other diseases of the respiratory system,	293	41	4	1	3	------	1	4	9	21	29	23	29	30	15	3	1	------
24	Diseases of the stomach,	1,701	1,268	247	39	4	3	20	3	12	10	10	15	23	28	13	6	------	------
25	Diarrhœa and enteritis,	236	1	------	3	------	1	29	54	46	35	35	33	7	2	------	------	------	------
26	Appendicitis and typhlitis,	247	37	3	5	2	------	1	6	15	18	37	30	35	26	12	------	------	------
27	Hernia, intestinal obstruction,																		

MORTALITY TABLE 9—Continued.

Abridged International List Number.	Cause of Death.	Age.															
		All Ages	Under 1	1	2	3	4	5 to 9	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80 to 89	90 to 99	100 and over	Unknown
28	Cirrhosis of the liver,	256							1	6	23	57	71	64	24	9	1		
29	Acute nephritis and Bright's disease,	2,812	14	5	4	4	5	15	41	92	225	327	579	632	583	259	26	1	
30	Diseases of the female genital organs,	136							6	30	40	41	11	5	2	1			
31	Puerperal fever,	115							9	55	41	10							
32	Other puerperal affections,	163							14	84	54	11							
33	Congenital debility and malformations,	1,326	1,309	6	1		2	4	3		1								
34	Senile debility,	181												2	15	53	85	24	2
35	Violent deaths (excluding suicide),	1,190	47	28	50	32	28	81	92	136	144	157	131	114	95	48	7		
36	Suicide,	280							15	48	51	65	47	41	10	3			
37	Other diseases,	3,454	541	48	29	20	15	79	119	173	297	424	547	486	444	204	28		
38	Unknown or ill-defined diseases,	25	2	12	1	2				2	1	3		2					
	Philadelphia (White).																		
	All Causes.	24,021	3,861	810	333	193	138	454	753	1,561	1,980	2,563	3,153	3,556	3,088	1,380	190	8	
1	Typhoid fever,	107	1	2			1	4	29	34	22	6	7			1			
2	Typhus fever,																		
3	Malaria,	3								2					1				
4	Smallpox,																		
5	Measles,	175	50	69	25	15	10	4		1	1								
6	Scarlet fever,	25		9	3	4	1	4	2	1		1							
7	Whooping cough,	31	16	9	2	2	1	1											
8	Diphtheria and croup,	308	25	71	55	41	23	71	13	2	2	2		3					
9	Influenza,	318	12	7	1	4	2	2	6	7	13	21	41	70	78	45	8	1	
10	Asiatic cholera,																		
11	Cholera nostras,	1												1					
12	Other epidemic diseases,	95	24	11	7		3	3		3	9	11	7	7	7	2	1		
13	Tuberculosis of the lungs,*	2,328	20	14	7	2	1	7	146	551	578	484	298	157	57	6			
14	Tuberculous meningitis,	159	45	26	21	20	4	12	11	5	10	8	4	1					
15	Other forms of tuberculosis,	147	11	6	3	2	4	15	14	26	14	20	23	6	1	2			
16	Cancer and other malignant tumors,	1,466	1	1				3	10	33	105	242	409	371	231	55	5		
17	Meningitis,	75	20	6	5	1	2	11	15	6	4	2	3						
18	Cerebral hæmorrhage and softening,	1,110	2		1	1	2	1	1	1	24	79	184	321	355	121	17		

19	Organic diseases of the heart,	3,140	22	1	2	7	4	33	87	107	167	301	445	753	782	341	45	3
20	Acute bronchitis,	195	89	19	5	2	3	1	1	4	2	6	7	14	15	22	5	
21	Chronic bronchitis,	135	2					2		3	4	9	14	41	29	23	8	
22	Pneumonia,	1,470	116	79	21	16	14	28	55	104	150	206	244	232	144	56	5	
23a	Bronchopneumonia,	1,097	377	151	49	21	11	33	16	21	32	39	64	112	108	56	6	1
23b	Other diseases of the respiratory system,	252	27	9	5	4	2	4	5	16	23	35	37	38	25	20	2	
24	Diseases of the stomach,	177	35	2	1	3		1	3	8	18	23	17	28	20	15	2	1
25	Diarrhœa and enteritis,	1,583	1,184	231	34	3	2	17	3	10	9	7	14	22	28	13	6	
26	Appendicitis and typhlitis,	217	1		3		1	28	53	40	28	31	23	7	2			
27	Hernia, intestinal obstruction,	229	34	3	4			1	6	10	18	55	28	34	24	12		
28	Cirrhosis of the liver,	249								5	22	55	69	64	24	9	1	
29	Acute nephritis and Bright's disease,	2,598	12	3	3	3	4	13	36	84	186	283	533	603	561	248	25	1
30	Diseases of the female genital organs,	113							4	24	29	39	10	4	2	1		
31	Puerperal fever,	103							5	52	38	8						
32	Other puerperal affections,	150							14	74	51	11						
33	Congenital debility and malformations,	1,222	1,206	6	1		2	4	2		1							
34	Senile debility,	174											2	14	52	84	21	1
35	Violent deaths (excluding suicide),	1,106	43	26	47	32	26	75	89	124	123	141	124	110	95	45	6	
36	Suicide,	273							14	47	47	65	47	41	9	3		
37	Other diseases,	3,170	484	38	28	17	15	76	113	155	249	370	499	461	438	200	27	
38	Unknown or ill-defined diseases,	20	2	11		1				1	1	3		1				
	Philadelphia (Colored).																	
	All Causes.	2,270	372	109	43	22	8	40	106	262	357	346	276	184	97	35	9	2
1	Typhoid fever,	7						1	2	2	2							
2	Typhus fever,																	
3	Malaria,																	
4	Smallpox,																	
5	Measles,	15	5	7		2			1									
6	Scarlet fever,	2	1							1								
7	Whooping cough,	12	4	4	2		1	1										
8	Diphtheria and croup,	12	2		2	1		3	1			1	2					
9	Influenza,	28	1	1	1				1	3	4	1	5	7	2	1	1	
10	Asiatic cholera,																	
11	Cholera nostras,																	
12	Other epidemic diseases,	7	3								1	1	1	1				
13	Tuberculosis of the lungs,*	439	4	7	1	2	3	9	51	114	117	77	31	18	4	1		
14	Tuberculous meningitis,	22	7	3	3	3		3	1	1		1						
15	Other forms of tuberculosis,	37	1	2	4	2		3	9	3	6	5	1	1				
16	Cancer and other malignant tumors,	83			1					3	8	24	28	13	6			
17	Meningitis,	3	1	1	1													
18	Cerebral hæmorrhage and softening,	58			1						8	11	15	13	6	4		
19	Organic diseases of the heart,	242		1				2	8	18	28	44	47	50	34	9	1	
20	Acute bronchitis,	27	14	7					1	1		1		1	1		1	
21	Chronic bronchitis,	14	1	1				1		1		3	4		2			1
22	Pneumonia,	165	13	11	2			2	5	36	31	28	21	10	5	1		

MORTALITY TABLE 9—Continued.

Abridged International List Number.	Cause of Death.	Age.																
		All Ages	Under 1	1	2	3	4	5 to 9	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80 to 89	90 to 99	100 and over	Unknown
23a	Bronchopneumonia,	131	52	31	13	4				3	8	7	4	4	5				
23b	Other diseases of the respiratory system,	25	4						1	2	5	7	4	2					
24	Diseases of the stomach,	26	6	2					1	1	3	6	6	1					
25	Diarrhœa and enteritis,	118	84	16	5	1	1	3		2	1	3	1	1					
26	Appendicitis and typhlitis,	19						1	1	6	7	4							
27	Hernia, intestinal obstruction,	18	3		1	2				5		2	2	1	2				
28	Cirrhosis of the liver,	7							1	1	1	2	2						
29	Acute nephritis and Bright's disease,	214	2	2	1	1	1	2	5	8	39	44	46	29	22	11	1		
30	Diseases of the female genital organs,	23							2	6	11	2	1	1					
31	Puerperal fever,	12							4	3	3	2							
32	Other puerperal affections,	13								10	3								
33	Congenital debility and malformations,	104	103						1										
34	Senile debility,	7												1	1	1	3	1	
35	Violent deaths (excluding suicide),	84	4	2	3		2	6	3	12	21	16	7	4		3	1		
36	Suicide,	7							1	1	4				1				
37	Other diseases,	284	57	10	1	3		3	6	18	48	54	48	25	6	4	1		
38	Unknown or ill-defined diseases,	5		1	1	1				1				1					
	Pittsburgh (Total).																		
	All Causes.	8,728	1,765	396	146	86	82	240	346	728	876	927	979	1,027	767	329	32	2	
1	Typhoid fever,	59			1	1		3	8	24	14	5	1	2					
2	Typhus fever,																		
3	Malaria,	3							1	2									
4	Smallpox,																		
5	Measles,	74	23	25	11	6	2	5	1		1								
6	Scarlet fever,	55	4	9	5	4	4	16	9	4									
7	Whooping cough,	45	19	16	5	2	1	2											
8	Diphtheria and croup,	154	14	23	28	20	18	41	8			1	1						
9	Influenza,	60	3	3		1		2	1	3	5	7	6	11	13	4	1		
10	Asiatic cholera,																		
11	Cholera nostras,	1	1																
12	Other epidemic diseases,	37	13	2	1			1		1	6	2	6	3	1	1			

13	Tuberculosis of the lungs,*	620	15	6	2	3	4	8	67	154	155	102	53	37	12	2		
14	Tuberculous meningitis,	70	16	16	4	3	3	7	8	7	3	2	1					
15	Other forms of tuberculosis,	71	3			1	1	9	10	22	14	5	3	2	1			
16	Cancer and other malignant tumors,	493	2	1					4	12	38	95	130	129	66	15	1	
17	Meningitis,	45	14	7	3	1	1	6	3	4	1	2	2	1				
18	Cerebral hæmorrhage and softening,	382	2	1	1	1	1	2	1	4	15	30	72	110	96	44	1	1
19	Organic diseases of the heart,	678	6			1	1	12	40	32	57	95	109	174	113	35	3	
20	Acute bronchitis,	86	35	15	3	2		2			2	3	2	3	9	8	2	
21	Chronic bronchitis,	55	1					1	1			2	1	12	17	16	4	
22	Pneumonia,	844	46	44	9	7	7	9	32	68	111	136	150	127	71	23	4	
23a	Bronchopneumonia,	560	198	62	21	8	13	12	7	14	15	18	41	54	61	30	6	
23b	Other diseases of the respiratory system,	115	9	6	5		1	5	2	6	12	12	13	13	21	9	1	
24	Diseases of the stomach,	102	21	2	1				1	10	13	11	13	16	9	5		
25	Diarrhœa and enteritis,	631	457	101	19	5	5	7		5	7	5	7	1	4	7	1	
26	Appendicitis and typhlitis,	98	2		1		2	3	10	22	26	17	9	5		1		
27	Hernia, intestinal obstruction,	87	23	2	3	1		2	1	4	5	9	12	12	11	2		
28	Cirrhosis of the liver,	102						1	1	6	11	22	28	22	10	1		
29	Acute nephritis and Bright's disease,	526	5	7	1		4	7	19	33	46	79	80	101	100	44		
30	Diseases of the female genital organs,	36							1	5	13	12	4	1				
31	Puerperal fever,	71							5	26	34	6						
32	Other puerperal affections,	56							8	19	23	5	1					
33	Congenital debility and malformations,	559	554	2	2		1											
34	Senile debility,	44												2	15	22	4	1
35	Violent deaths (excluding suicide),	628	15	11	9	9	7	45	47	136	109	85	63	38	40	13	1	
36	Suicide,	88							2	21	21	19	15	8	1	1		
37	Other diseases,	1,117	261	29	10	10	6	32	48	84	119	139	154	140	96	46	3	
38	Unknown or ill-defined diseases,	16	3	6	1							1	2	3				
	Pittsburgh (White).																	
	All Causes.	8,197	1,670	370	141	77	79	216	322	675	807	853	909	983	744	321	30	
1	Typhoid fever,	54			1	1		3	8	22	11	5	1	2				
2	Typhus fever,																	
3	Malaria,	3							1	2								
4	Smallpox,																	
5	Measles,	71	22	25	11	4	2	5	1		1							
6	Scarlet fever,	53	4	8	5	4	4	16	8	4								
7	Whooping cough,	42	18	14	5	2	1	2										
8	Diphtheria and croup,	150	14	23	28	19	17	40	7			1	1					
9	Influenza,	54	3	3		1		1	1	2	3	6	5	11	13	4	1	
10	Asiatic cholera,																	
11	Cholera nostras,	1	1															
12	Other epidemic diseases,	35	13	2	1			1		1	5	2	6	2	1	1		
13	Tuberculosis of the lungs,*	546	15	5	1	2	4	2	58	136	137	92	47	34	11	2		
14	Tuberculous meningitis,	64	14	16	4	3	3	4	8	6	3	2	1					
15	Other forms of tuberculosis,	65	2			1	1	7	8	22	13	5	3	2	1			
16	Cancer and other malignant tumors,	476	2	1					4	12	38	92	126	123	63	14	1	

MORTALITY TABLE 9—Continued.

Abridged International List Number.	Cause of Death.	Age.																
		All Ages	Under 1	1	2	3	4	5 to 9	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80 to 89	90 to 99	100 and over	Unknown
17	Meningitis,	43	13	7	3	1	1	6	3	3	1	2	2	1					
18	Cerebral hæmorrhage and softening,	365	2	1	1	1	1	2	1	4	14	28	69	104	92	44	1		
19	Organic diseases of the heart,	637	6			1	1	12	39	29	54	86	95	165	111	35	3		
20	Acute bronchitis,	84	34	14	3	2		2			2	3	2	3	9	8	2		
21	Chronic bronchitis,	53						1	1			2	1	12	16	16	4		
22	Pneumonia,	775	42	42	8	6	7	8	30	60	96	120	140	121	70	22	3		
23a	Bronchopneumonia,	527	186	55	19	7	12	11	5	13	15	18	38	53	60	29	6		
23b	Other diseases of the respiratory system,	105	8	6	5		1	5	1	5	9	10	12	12	20	9	1		
24	Diseases of the stomach,	96	20	2	1				1	7	13	10	13	16	8	5			
25	Diarrhœa and enteritis,	600	440	94	19	5	5	4		5	7	4	5	1	4	6	1		
26	Appendicitis and typhlitis,	93	2		1		2	3	10	20	24	16	9	5		1			
27	Hernia, intestinal obstruction,	83	22	2	3	1		2	1	4	4	9	11	12	10	2			
28	Cirrhosis of the liver,	100						1	1	6	11	20	28	22	10	1			
29	Acute nephritis and Bright's disease,	480	5	6	1		4	7	18	31	43	67	74	96	95	42			
30	Diseases of the female genital organs,	32							1	4	12	11	4						
31	Puerperal fever,	68							3	26	33	6							
32	Other puerperal affections,	53							8	18	22	5							
33	Congenital debility and malformations,	527	522	2	2		1												
34	Senile debility,	30												1	15	20	3		
35	Violent deaths (excluding suicide),	597	15	16	9	8	6	40	47	129	106	80	58	35	40	13	1		
36	Suicide,	87							2	20	21	19	15	8	1	1			
37	Other diseases,	1,114	242	26	9	8	6	31	46	83	109	131	141	139	94	46	3		
38	Unknown or ill-defined diseases,	16	3	6	1							1	2	3					
	Pittsburgh (Colored).																		
	All Causes.	531	95	26	5	9	3	24	24	53	69	74	70	44	23	8	2	2	
1	Typhoid fever,	5								2	3								
2	Typhus fever,																		
3	Malaria,																		
4	Smallpox,																		
5	Measles,	3	1			2													
6	Scarlet fever,	2		1					1										

7	Whooping cough,	3	1	2															
8	Diphtheria and croup,	4				1	1	1	1										
9	Influenza,	6						1		1	2	1	1						
10	Asiatic cholera,																		
11	Cholera nostras,																		
12	Other epidemic diseases,	2									1		1						
13	Tuberculosis of the lungs,*	74		1	1	1		6	9	18	18	10	6	3	1				
14	Tuberculous meningitis,	6	2					3		1									
15	Other forms of tuberculosis,	6	1					2	2		1								
16	Cancer and other malignant tumors,	17										3	4	6	3	1			
17	Meningitis,	2	1							1									
18	Cerebral hæmorrhage and softening,	17									1	2	3	6	4			1	
19	Organic diseases of the heart,	41							1	3	3	9	14	9	2				
20	Acute bronchitis,	2	1	1															
21	Chronic bronchitis,	2	1												1				
22	Pneumonia,	69	4	2	1	1		1	2	8	15	16	10	6	1	1	1		
23a	Bronchopneumonia,	33	12	7	2	1	1	1	2	1			3	1	1	1			
23b	Other diseases of the respiratory system,	10	1						1		3	2	1	1	1				
24	Diseases of the stomach,	6	1							3		1			1				
25	Diarrhœa and enteritis,	31	17	7				3				1	2			1			
26	Appendicitis and typhlitis,	5								2	2	1							
27	Hernia, intestinal obstruction,	4	1								1		1		1				
28	Cirrhosis of the liver,	2										2							
29	Acute nephritis and Bright's disease,	37		1					1	2	3	12	6	5	5	2			
30	Diseases of the female genital organs,	4								1	1	1		1					
31	Puerperal fever,	3							2		1								
32	Other puerperal affections,	3								1	1		1						
33	Congenital debility and malformations,	32	32																
34	Senile debility,	5												1		2	1	1	
35	Violent deaths (excluding suicide),	31		1		1	1	5		7	3	5	5	3					
36	Suicide,	1								1									
37	Other diseases,	63	19	3	1	2		1	2	1	10	8	13	1	2				
38	Unknown or ill-defined diseases,																		
	Scranton.																		
	All Causes.	2,114	474	91	37	23	12	57	92	159	173	245	239	262	161	74	15		
1	Typhoid fever,	18		1					6	2	4	3	2						
2	Typhus fever,																		
3	Malaria,																		
4	Smallpox,																		
5	Measles,	8		6	1			1											
6	Scarlet fever,	4		1				2		1									
7	Whooping cough,	5	3	1	1														
8	Diphtheria and croup,	40	2	5	6	8	4	13	1			1							
9	Influenza,	13	7	1		1						1	1	1	2	1			
10	Asiatic cholera,																		

MORTALITY TABLE 9—Continued.

Abridged International List Number.	Cause of Death.	Age. All Ages	Under 1	1	2	3	4	5 to 9	10 to 19	20 to 29	30 to 39	40 to 49	50 to 59	60 to 69	70 to 79	80 to 89	90 to 99	100 and over	Unknown
11	Cholera nostras,	2											1	1					
12	Other epidemic diseases,	17	6	4	1								3	2		1			
13	Tuberculosis of the lungs,*	104	1	1	1	1		1	5	32	24	22	9	6	1				
14	Tuberculous meningitis,	18	4	3	1	1	2		2	3		2							
15	Other forms of tuberculosis,	12	2	1				1	1	2	2	2	1						
16	Cancer and other malignant tumors,	131								3	8	29	27	48	10	6			
17	Meningitis,	11	2	2	3	1			2					1					
18	Cerebral hæmorrhage and softening,	100									3	7	17	37	27	8	1		
19	Organic diseases of the heart,	185							15	14	19	26	36	35	25	14	1		
20	Acute bronchitis,	31	16	3	2							1	2	1	4	1	1		
21	Chronic bronchitis,	13						1					1	7	3	1			
22	Pneumonia,	160	14	6	3	1	1	7	8	11	17	26	23	18	13	9	3		
23a	Bronchopneumonia,	127	63	18	2	2	2	4	1		2	2	7	6	10	6	2		
23b	Other diseases of the respiratory system,	27		3	1			2	1	4	1	5	4	4		2			
24	Diseases of the stomach,	39	8	2		1	1	3		2	4	2	4	7	5				
25	Diarrhœa and enteritis,	219	171	26	6			3	2			1	3	4	3				
26	Appendicitis and typhlitis,	16		1				2	6	1	2	1	3						
27	Hernia, intestinal obstruction,	27	3	1				1	1	1	3	6	3	5	3				
28	Cirrhosis of the liver,	11								1	1	5	3		1				
29	Acute nephritis and Bright's disease,	148	4		2	1		3	5	9	18	19	29	29	24	4	1		
30	Diseases of the female genital organs,	14	1						1	2	2	3	3	2					
31	Puerperal fever,	19							1	14	3	1							
32	Other puerperal affections,	14							1	7	6								
33	Congenital debility and malformations,	120	118			1				1									
34	Senile debility,	4														2	2		
35	Violent deaths (excluding suicide),	188	5	2	7	2	2	7	21	30	33	36	15	13	9	6			
36	Suicide,	24								6	7	5	4	1		1			
37	Other diseases,	243	46	2		3		6	12	13	14	39	38	34	20	12	4		
38	Unknown or ill-defined diseases,	2		1											1				

*Including acute miliary tuberculosis.

BIRTHS.

BIRTHS.

A total of 227,258 births were registered during the year. Of this number 219,061 were living births and 8,197 were stillbirths which had passed the fourth month of uterogestation. The birth rate of living children was 26.1 per thousand of population, a decrease of 0.5 as compared with the previous year; the birth rates for each year of the period 1906-1915, inclusive, being as follows:

1906,	23.4
1907,	24.1
1908,	26.2
1909,	26.1
1910,	26.5
1911,	26.2
1912,	25.6
1913,	25.7
1914,	26.6
1915,	26.1

The average age of all mothers was 30.7 years, of native mothers 31.2, and of foreign mothers 29.5 years. The average number of children including present birth born to all mothers was 3.4, to native mothers 3.2, and to foreign mothers 3.8. The average number of children living to all mothers was 3.0, to native mothers 2.9, and to foreign mothers 3.2. The average mother's age of legitimate first births was 24.1. The attendance at birth was: by physicians, 178,155, by midwives, 38,491, by other or no attendance, 2,415.

TABULATION OF BIRTHS.

The following general Birth Tables for the year are presented:

Table 1. Births for the entire State, for each municipality having more than 5,000 population, for groups of municipalities having less than 5,000 population, and for the rural sections of each county exclusive of all municipalities, by sex and month of birth. (Stillbirths excluded.)

Table 2. Births for the entire State, for all municipalities having more than 5,000 population, for all municipalities having less than 5,000 population, and for the rural sections of each county exclusive of all municipalities, by age and nativity of mother. (Stillbirths excluded.)

Table 3. Births for the entire State, for all municipalities having more than 5,000 population, and for the rural sections of each county exclusive of all municipalities, by nativity of mother and number of child. (Stillbirths excluded.)

Table 4. Births for the entire State, for all municipalities having more than 5,000 population, for all municipalities having less than 5,000 population, and for the rural sections of each county exclusive of all municipalities, by nativity of mother and number of her living children. (Stillbirths excluded.)

Table 5. Plural and illegitimate births for the entire State and for certain subdivisions of the State, by nativity of mother. (Stillbirths excluded.)

BIRTH TABLE 1.

Births in the entire State for municipalities having more than 5,000 population, for groups of municipalities having less than 5,000 population, and for the rural sections of each county exclusive of all municipalities, by sex and month of birth. (Stillbirths excluded.)

Registration Area.		All Births.	Month of Birth.											
			Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Entire State,	To.,	219,051	18,128	18,052	19,767	18,168	18,187	17,832	18,514	18,804	18,324	18,293	17,184	17,898
	M.,	112,607	9,172	9,279	10,148	9,310	9,428	9,145	9,600	9,690	9,310	9,397	8,880	9,248
	F.,	106,454	8,956	8,773	9,619	8,858	8,759	8,687	8,914	9,114	9,014	8,896	9,304	8,650
Total all municipalities having more than 5,000 population,	To.,	124,344	10,479	10,261	11,044	10,153	10,076	9,992	10,480	10,738	10,468	10,425	9,895	10,342
	M.,	63,629	5,287	5,253	5,615	5,201	5,272	5,121	5,383	5,478	5,358	5,346	5,074	5,241
	F.,	60,715	5,183	5,008	5,429	4,952	4,804	4,871	5,097	5,260	5,110	5,079	4,821	5,101
Total all municipalities having less than 5,000 population,	To.,	29,195	2,384	2,364	2,718	2,445	2,494	2,466	2,510	2,436	2,386	2,420	2,193	2,379
	M.,	15,047	1,185	1,199	1,379	1,238	1,308	1,257	1,296	1,259	1,220	1,270	1,148	1,288
	F.,	14,148	1,199	1,165	1,339	1,207	1,186	1,209	1,214	1,177	1,163	1,150	1,045	1,091
Total rural, exclusive of all municipalities,	To.,	65,522	5,274	5,427	6,005	5,570	5,617	5,374	5,524	5,630	5,470	5,358	5,096	5,177
	M.,	33,931	2,700	2,827	3,154	2,871	2,848	2,767	2,921	2,953	2,732	2,781	2,658	2,719
	F.,	31,591	2,574	2,600	2,851	2,699	2,769	2,607	2,603	2,677	2,738	2,577	2,438	2,458
Municipalities (5,000 and Over).														
Allentown,	To.,	1,695	171	114	147	128	134	122	131	157	168	155	135	133
	M.,	890	89	56	74	67	70	73	59	79	89	89	77	68
	F.,	805	82	58	73	61	64	49	72	78	79	66	58	65
Altoona,	To.,	1,453	130	124	118	117	129	123	111	115	129	115	128	114
	M.,	772	66	60	67	67	79	72	56	69	62	53	62	59
	F.,	681	64	64	51	50	50	51	55	46	67	62	66	55
Ambridge,	To.,	285	21	19	18	28	20	29	28	24	26	31	23	18
	M.,	153	11	8	12	14	10	15	11	12	14	19	16	11
	F.,	132	10	11	6	14	10	14	17	12	12	12	7	7

BIRTH TABLE 1—Continued.

Registration Area.		All Births.	Month of Birth.											
			Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Archbald,	To.,	292	33	13	27	24	24	22	23	18	19	24	38	27
	M.,	156	22	8	16	9	11	11	7	10	10	14	22	16
	F.,	136	11	5	11	15	13	11	16	8	9	10	16	11
Ashland,	To.,	184	19	19	14	17	15	11	18	18	17	11	12	13
	M.,	93	9	13	5	6	8	7	9	9	7	7	6	7
	F.,	91	10	6	9	11	7	4	9	9	10	4	6	6
Ashley,	To.,	246	16	20	21	25	23	15	14	17	21	26	21	27
	M.,	123	6	8	11	12	13	4	7	10	13	11	9	19
	F.,	123	10	12	10	13	10	11	7	7	8	15	12	8
Bangor,	To.,	132	12	14	12	10	9	18	6	6	17	17	7	4
	M.,	67	4	7	4	6	5	11	3	4	12	8	1	2
	F.,	65	8	7	8	4	4	7	3	2	5	9	6	2
Beaver Falls,	To.,	363	31	25	34	25	26	35	31	35	29	32	27	33
	M.,	177	15	10	12	10	19	22	17	21	13	15	16	16
	F.,	186	16	15	22	15	16	13	14	14	16	17	11	17
Bellevue,	To.,	207	11	17	22	14	17	18	19	16	15	14	22	22
	M.,	97	4	10	10	6	9	7	10	7	6	5	12	11
	F.,	110	7	7	12	8	8	11	9	9	9	9	10	11
Berwick (Columbia Co.),	To.,	115	9	15	10	12	9	5	8	12	10	10	7	8
	M.,	59	5	6	6	3	6	3	4	7	5	5	5	4
	F.,	56	4	9	4	9	3	2	4	5	5	5	2	4
Bethlehem,	To.,	343	26	32	28	38	34	16	20	31	23	28	25	33
	M.,	157	13	17	17	16	15	12	13	10	10	11	5	18
	F.,	186	13	15	11	22	19	4	16	21	13	17	20	15
Blakely,	To.,	154	8	11	16	9	8	10	12	19	23	13	11	14
	M.,	80	4	8	10	3	6	4	6	9	8	8	6	8
	F.,	74	4	3	6	6	2	6	6	10	15	5	5	6

Bloomsburg,	To.,	162	15	15	13	9	9	10	20	10	29	8	7	17
	M.,	76	7	5	8	6	5	6	7	5	15	2	4	6
	F.,	86	8	10	5	3	4	4	13	5	14	6	3	1.
Braddock,	To.,	852	68	59	90	70	59	61	70	83	72	74	84	62
	M.,	465	34	27	50	42	28	34	37	57	36	40	44	36
	F.,	387	34	32	40	28	31	27	33	26	36	34	40	26
Bradford,	To.,	304	26	25	27	32	24	22	35	17	21	32	22	21
	M.,	161	12	10	13	19	10	12	21	11	9	20	13	11
	F.,	143	14	15	14	13	14	10	14	6	12	12	9	10
Bristol,	To.,	285	30	20	33	21	38	18	18	21	23	22	20	21
	M.,	150	16	8	17	10	24	6	11	10	14	10	13	11
	F.,	135	14	12	16	11	14	12	7	11	9	12	7	10
Butler,	To.,	651	49	61	55	47	49	64	54	46	46	62	66	52
	M.,	330	23	37	33	30	26	24	29	28	22	31	28	19
	F.,	321	26	24	22	17	23	40	25	18	24	31	38	33
Carbondale,	To.,	427	36	26	31	56	43	44	37	17	46	32	29	36
	M.,	231	20	10	15	32	21	24	20	11	29	19	15	15
	F.,	196	16	16	16	24	22	20	17	6	17	13	14	21
Carlisle,	To.,	193	14	16	19	21	18	13	15	16	11	21	15	14
	M.,	99	6	10	9	15	8	6	7	5	8	12	7	6
	F.,	94	8	6	10	6	10	7	8	11	3	9	8	8
Carnegie,	To.,	350	31	31	35	23	33	32	32	31	20	26	24	32
	M.,	198	18	12	19	13	20	19	24	21	11	14	12	15
	F.,	152	13	19	16	10	13	13	8	10	9	12	12	17
Carrick,	To.,	213	17	17	14	18	14	26	24	13	16	25	17	18
	M.,	116	9	9	6	10	8	11	14	8	9	13	19	9
	F.,	97	8	8	8	8	6	9	10	5	7	12	7	9
Catasauqua,	To.,	92	6	12	9	7	4	9	10	6	9	4	6	10
	M.,	49	3	6	3	3	2	6	6	3	6	3	5	3
	F.,	43	3	6	6	4	2	3	4	3	3	1	1	7
Chambersburg,	To.,	299	22	27	26	24	20	28	24	20	33	25	28	22
	M.,	165	13	16	11	14	10	16	15	8	16	16	18	12
	F.,	134	9	11	15	10	10	12	9	12	17	9	10	10
Charleroi,	To.,	289	29	18	20	26	21	30	27	31	27	17	16	18
	M.,	131	10	9	15	9	10	14	14	20	7	10	7	6
	F.,	158	19	9	14	17	11	16	13	11	20	7	9	12

BIRTH TABLE 1—Continued.

Registration Area.		All Births.	Month of Birth.											
			Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Chester,	To.,..	1,258	100	101	116	88	92	95	101	117	121	111	84	132
	M.,...	671	42	61	65	46	47	55	57	51	66	59	55	66
	F.,...	587	58	40	50	42	45	40	44	66	55	52	29	65
Clearfield,	To.,..	183	15	17	11	11	22	12	13	22	13	16	15	16
	M.,...	94	8	7	7	5	9	7	6	10	4	11	11	9
	F.,...	89	7	10	4	6	13	5	7	12	9	5	4	7
Coaldale (Schuylkill Co.),	To.,..	200	10	17	24	17	17	11	17	26	17	19	18	7
	M.,...	110	6	9	10	11	11	6	6	16	16	10	11	4
	F.,...	90	4	8	14	6	6	5	11	10	7	9	7	3
Coatesville,	To.,..	322	17	20	41	19	29	20	30	29	32	28	30	27
	M.,...	177	12	13	21	10	11	11	19	12	23	13	15	17
	F.,...	145	5	7	20	9	18	9	11	17	9	15	15	10
Columbia,	To.,..	215	23	18	11	20	16	12	21	27	13	20	18	16
	M.,...	103	17	8	6	5	6	4	12	16	5	11	8	5
	F.,...	112	6	10	5	15	10	8	9	11	8	9	10	11
Connellsville,	To.,..	326	29	33	31	21	35	22	26	29	32	24	21	23
	M.,...	169	15	13	14	11	19	8	13	12	22	15	13	14
	F.,...	157	14	20	17	10	16	14	13	17	10	9	8	9
Conshohocken,	To.,..	219	19	12	17	17	17	15	23	16	15	21	26	21
	M.,...	126	10	8	10	6	7	8	14	11	11	14	15	12
	F.,...	93	9	4	7	11	10	7	9	5	4	7	11	9
Coraopolis,	To.,..	160	19	12	21	7	11	11	17	15	11	9	7	20
	M.,...	103	7	10	16	5	7	8	11	7	7	6	5	14
	F.,...	57	12	2	5	2	4	3	6	8	4	3	2	6
Corry,	To.,..	116	7	11	11	14	13	9	10	7	5	16	9	10
	M.,...	68	3	6	9	9	10	6	5	5	2	5	5	3
	F.,...	48	4	5	2	5	3	3	5	2	3	7	4	7

Danville,	To.,	144	14	10	16	17	9	14	15	6	10	12	16	5
	M.,	70	8	5	8	7	8	8	9	5	2	3	5	2
	F.,	74	6	5	8	10	1	6	6	1	8	9	11	3
Darby,	To.,	124	16	11	8	13	5	7	12	7	11	11	10	13
	M.,	69	10	9	3	5	3	4	8	2	8	5	3	9
	F.,	55	6	2	5	8	2	3	4	5	3	6	7	4
Dickson City,	To.,	392	36	28	38	39	29	33	25	35	31	37	34	27
	M.,	213	18	17	20	17	18	16	10	20	16	22	20	19
	F.,	79	18	11	18	22	11	17	15	15	15	15	14	8
Donora,	To.,	452	37	36	46	31	39	34	32	41	32	47	35	42
	M.,	213	16	13	22	15	19	18	17	16	15	23	19	20
	F.,	239	21	23	24	16	20	16	15	25	17	24	16	22
DuBois,	To.,	381	32	30	35	25	32	32	41	44	24	34	22	30
	M.,	197	15	19	18	14	15	22	21	25	8	15	12	13
	F.,	184	17	11	17	11	17	10	20	19	16	19	10	17
Dunmore,	To.,	694	50	47	57	51	65	55	59	83	59	59	56	53
	M.,	356	14	30	32	26	32	29	30	41	30	36	28	28
	F.,	338	36	17	25	25	33	26	29	42	29	23	28	25
Duquesne,	To.,	637	47	48	53	47	58	59	45	66	60	48	51	55
	M.,	329	26	23	27	22	37	33	24	34	27	21	24	31
	F.,	308	21	25	26	25	21	26	21	32	33	27	27	24
Duryea,	To.,	297	25	30	27	25	24	28	25	23	17	23	19	31
	M.,	152	17	17	13	9	9	20	10	18	8	9	8	14
	F.,	145	8	13	14	16	15	8	15	5	9	14	11	17
East Conemaugh,	To.,	210	19	19	16	21	19	18	13	17	22	13	17	15
	M.,	103	11	12	7	7	8	12	7	7	10	6	11	5
	F.,	107	8	7	9	14	11	6	6	10	12	7	6	11
East Pittsburgh,	To.,	180	17	17	20	13	13	15	20	13	12	15	16	9
	M.,	93	11	9	9	6	7	9	11	5	6	10	8	2
	F.,	87	6	8	11	7	6	6	9	8	6	5	8	7
Easton,	To.,	692	49	68	66	71	44	49	61	53	57	57	59	55
	M.,	357	31	40	37	34	23	23	37	23	26	26	33	24
	F.,	335	18	28	29	37	21	26	27	30	31	31	26	31
Edwardsville,	To.,	220	23	21	24	22	21	12	15	20	9	18	13	22
	M.,	99	8	12	8	9	9	4	6	13	4	11	3	12
	F.,	121	15	9	16	13	12	8	9	7	5	7	10	10

BIRTH TABLE 1—Continued.

Registration Area.		All Births.	Month of Birth.											
			Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Erie,	To.,	2,122	180	152	198	181	187	174	192	172	161	182	168	165
	M.,	1,111	97	74	117	91	97	104	110	88	78	91	84	80
	F.,	1,011	83	88	81	90	90	70	82	84	83	91	84	85
Etna,	To.,	209	18	20	16	15	18	14	30	19	13	14	16	16
	M.,	105	4	13	9	7	8	6	15	11	5	5	12	10
	F.,	103	14	7	7	8	10	8	14	8	8	9	4	6
Farrell,	To.,	422	44	40	42	34	42	26	41	33	37	28	30	25
	M.,	179	20	17	13	17	16	8	19	12	16	15	14	12
	F.,	243	24	23	29	17	26	18	22	21	21	13	16	13
Forest City,	To.,	270	22	21	30	24	19	24	17	23	21	23	23	23
	M.,	147	13	11	17	11	11	12	12	14	11	15	9	11
	F.,	123	9	10	13	13	8	12	5	9	10	8	14	12
Franklin (Venango Co.),	To.,	224	11	9	25	25	20	22	19	16	17	15	23	22
	M.,	114	6	3	12	17	12	14	11	6	7	3	9	14
	F.,	110	5	6	13	8	8	8	8	10	10	12	14	8
Freeland,	To.,	260	22	19	28	25	20	26	22	17	21	20	22	18
	M.,	140	11	11	17	12	11	13	8	12	11	10	15	9
	F.,	120	11	8	11	13	9	13	14	5	10	10	7	9
Gilberton,	To.,	216	17	22	18	13	23	16	13	15	14	20	22	23
	M.,	112	13	13	9	5	8	12	8	10	4	10	10	10
	F.,	104	4	9	9	8	15	4	5	5	10	10	12	13
Glassport,	To.,	217	22	15	22	14	12	19	10	19	23	19	16	26
	M.,	106	9	12	12	4	5	8	6	8	13	13	7	9
	F.,	111	13	3	10	10	7	11	4	11	10	6	9	17
Greensburg,	To.,	321	27	21	29	26	32	31	41	28	23	18	21	24
	M.,	167	10	7	11	16	20	17	22	13	15	8	12	16
	F.,	154	17	14	18	10	12	14	19	15	8	10	9	8

Greenville,	To.,	168	15	14	20	12	11	18	12	18	15	14	9	10
	M.,	91	6	8	9	8	5	12	7	11	5	10	7	3
	F.,	77	9	6	11	4	6	6	5	7	10	4	2	7
Hanover,	To.,	183	16	13	21	13	18	17	12	16	18	12	14	13
	M.,	96	5	6	13	4	11	11	9	7	9	7	8	6
	F.,	87	11	7	8	9	7	6	3	9	9	5	6	7
Harrisburg,	To.,	1,364	130	115	113	106	118	114	121	116	108	106	110	107
	M.,	708	61	60	50	56	63	60	65	54	55	58	65	59
	F.,	656	69	55	63	50	55	54	55	62	53	48	44	48
Hazleton,	To.,	884	65	68	71	85	57	75	83	88	81	68	67	76
	M.,	444	30	36	36	44	25	33	48	47	39	35	33	37
	F.,	440	35	32	35	41	32	42	35	41	42	32	34	39
Homestead,	To.,	764	64	54	69	48	63	58	76	69	60	84	58	61
	M.,	389	35	25	39	23	31	26	46	32	32	42	28	30
	F.,	375	29	29	30	25	32	32	30	37	28	42	30	31
Huntingdon,	To.,	133	14	12	13	9	12	12	11	11	11	13	7	8
	M.,	73	13	6	6	5	9	6	3	6	6	9	1	3
	F.,	60	1	6	7	4	3	6	8	5	5	4	6	5
Indiana,	To.,	139	11	12	15	11	13	7	12	14	16	9	7	12
	M.,	73	5	6	10	4	6	4	4	7	11	6	2	8
	F.,	66	6	6	5	7	7	3	8	7	5	3	5	4
Jeannette,	To.,	349	26	29	34	42	33	23	32	31	23	23	29	24
	M.,	185	9	16	18	26	19	15	12	16	12	11	16	15
	F.,	164	17	13	16	16	14	8	20	15	11	12	13	9
Jersey Shore,	To.,	143	10	11	9	10	19	7	11	18	12	13	11	12
	M.,	75	5	3	6	4	9	5	6	9	5	8	8	7
	F.,	68	5	8	3	6	10	2	5	9	7	5	3	5
Johnstown,	To.,	2,183	210	154	177	169	175	174	180	202	185	167	191	199
	M.,	1,126	106	77	90	88	97	93	91	91	102	92	91	108
	F.,	1,057	104	77	87	81	78	81	89	111	83	75	100	91
Juniata,	To.,	195	17	21	22	25	18	20	14	9	8	13	14	14
	M.,	105	13	14	10	12	7	11	9	4	5	4	8	8
	F.,	90	4	7	12	13	11	9	5	5	3	9	6	6
Kane,	To.,	211	14	15	17	25	19	18	18	11	27	13	21	13
	M.,	107	9	9	10	10	9	9	8	4	15	6	12	6
	F.,	104	5	6	7	15	10	9	10	7	12	7	9	7

BIRTH TABLE 1—Continued.

Registration Area.		All Births.	Month of Birth.											
			Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Kingston,	To.,	209	21	18	9	24	14	25	13	21	26	16	8	14
	M.,	101	8	5	5	13	6	11	5	13	11	12	5	7
	F.,	108	13	13	4	11	8	14	8	8	15	4	3	7
Knoxville (Allegheny Co.),	To.,	96	4	3	7	11	9	11	5	12	7	7	13	7
	M.,	48	3	2	1	6	4	5	2	4	4	5	9	3
	F.,	48	1	1	6	5	5	6	3	8	3	2	4	4
Lancaster,	To.,	1,137	80	119	102	84	85	86	109	87	104	96	87	98
	M.,	588	41	64	49	46	40	51	60	46	61	51	37	42
	F.,	549	39	55	53	38	45	35	49	41	43	45	50	56
Lansford,	To.,	372	25	28	36	39	35	35	23	44	29	23	31	24
	M.,	196	17	11	14	21	19	17	15	24	13	15	18	12
	F.,	176	8	17	22	18	16	18	8	20	16	8	13	12
Larksville,	To.,	239	17	19	19	22	22	17	17	16	18	21	26	25
	M.,	121	8	6	11	12	9	8	5	9	11	13	14	15
	F.,	118	9	13	8	10	13	9	12	7	7	8	12	10
Latrobe,	To.,	240	19	19	22	22	25	17	20	22	22	16	14	22
	M.,	137	6	7	14	11	15	9	15	15	11	7	13	14
	F.,	103	13	12	8	11	10	8	5	7	11	9	1	8
Lebanon,	To.,	396	30	44	40	30	28	30	34	28	36	40	30	26
	M.,	192	14	18	20	12	20	12	20	13	18	19	15	11
	F.,	204	16	26	20	18	8	18	14	15	18	21	15	15
Lehighton,	To.,	152	7	17	14	11	19	11	14	12	12	14	10	11
	M.,	75	3	11	7	5	10	6	6	6	5	8	4	4
	F.,	77	4	6	7	6	9	5	8	6	7	6	6	7
Lewistown,	To.,	210	16	18	17	18	12	14	20	23	15	20	21	16
	M.,	97	9	11	8	5	6	8	9	12	6	7	9	6
	F.,	113	7	7	9	13	6	5	11	11	9	13	12	10

Lock Haven,	To.,	189	11	21	18	24	13	19	12	13	11	16	18	13
	M.,	102	5	11	13	14	6	11	5	8	4	7	10	8
	F.,	87	6	10	5	10	7	8	7	5	7	9	8	5
Luzerne,	To.,	159	15	12	17	11	10	12	16	11	17	11	16	11
	M.,	79	9	5	9	8	6	5	9	5	4	4	9	6
	F.,	80	6	7	8	3	4	7	7	6	13	7	7	5
McKeesport,	To.,	1,403	130	132	132	116	116	108	120	128	114	104	107	96
	M.,	744	78	71	67	58	55	45	59	80	57	54	65	55
	F.,	659	52	61	65	58	61	63	61	48	57	50	42	41
McKees Rocks,	To.,	618	66	38	53	48	44	55	48	55	53	55	46	57
	M.,	309	30	16	26	24	25	33	24	26	30	28	21	26
	F.,	309	36	22	27	24	19	22	24	29	23	27	25	31
Mahanoy City,	To.,	553	48	39	45	47	52	48	52	49	43	43	37	50
	M.,	262	17	16	21	27	23	22	25	24	23	23	18	23
	F.,	291	31	23	24	20	29	26	27	25	20	20	19	27
Meadville,	To.,	311	23	20	24	35	23	26	22	32	27	22	27	30
	M.,	158	12	6	13	20	14	12	8	10	17	11	18	17
	F.,	153	11	14	11	15	9	14	14	22	10	11	9	13
Middletown,	To.,	115	14	9	5	7	8	13	15	7	11	3	10	13
	M.,	58	7	4	3	5	5	9	6	3	4	1	3	8
	F.,	57	7	5	2	2	3	4	9	4	7	2	7	5
Millvale,	To.,	185	11	18	11	17	16	26	17	17	15	17	13	13
	M.,	92	6	7	6	9	8	13	8	9	9	6	7	4
	F.,	93	5	11	5	8	8	7	9	8	6	11	6	9
Milton,	To.,	168	4	12	13	11	17	11	23	18	14	17	12	16
	M.,	76	2	6	6	6	12	4	10	7	8	5	5	5
	F.,	92	2	6	7	5	5	7	13	11	6	12	7	11
Minersville,	To.,	351	29	16	40	27	32	32	36	33	22	31	24	29
	M.,	178	14	6	17	16	21	16	26	12	12	13	12	13
	F.,	173	15	10	23	11	11	16	10	21	10	18	12	16
Monessen,	To.,	776	64	61	59	57	76	51	47	64	82	80	71	64
	M.,	408	33	31	31	31	48	28	20	36	37	44	37	32
	F.,	368	31	30	28	26	28	23	27	28	45	36	34	32
Monongahela,	To.,	211	12	13	14	26	27	22	26	12	18	11	9	21
	M.,	104	4	7	8	12	15	11	15	7	3	5	7	10
	F.,	107	8	6	6	14	12	11	11	5	15	6	2	11

BIRTH TABLE 1—Continued.

Registration Area.		All Births.	Month of Birth.										
			Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Mount Carmel,	To.,	637	53	54	73	53	64	63	49	55	44	43	44	42
	M.,	315	23	31	35	26	28	32	28	22	19	27	22	22
	F.,	322	30	23	38	27	36	31	21	33	25	16	22	20
Mount Pleasant,	To.,	231	22	19	19	21	19	19	18	16	17	28	16	17
	M.,	136	19	10	12	12	11	8	8	8	11	14	10	13
	F.,	95	3	9	7	9	8	11	10	8	6	14	6	4
Munhall,	To.,	230	13	11	25	13	23	23	17	17	26	18	22	22
	M.,	121	6	4	10	7	14	11	10	10	18	7	10	14
	F.,	109	7	7	15	6	9	12	7	7	8	11	12	8
Nanticoke,	To.,	719	57	41	53	75	73	46	59	64	68	88	42	53
	M.,	400	35	24	29	41	42	27	34	37	38	41	23	29
	F.,	319	22	17	24	34	31	19	25	27	30	47	19	24
New Brighton,	To.,	258	17	17	21	15	26	27	27	27	25	23	17	16
	M.,	131	13	7	9	4	15	17	14	12	9	14	12	5
	F.,	127	4	10	12	11	11	10	13	15	16	9	5	11
New Castle,	To.,	1,163	102	88	89	98	94	88	106	126	100	94	89	89
	M.,	559	49	43	38	53	43	53	55	56	42	36	43	48
	F.,	604	53	45	51	45	51	35	51	70	58	58	46	41
New Kensington,	To.,	399	38	36	30	37	35	29	32	29	34	43	29	27
	M.,	214	19	17	16	23	20	15	17	14	18	21	17	17
	F.,	185	19	19	14	14	15	14	15	15	16	22	12	10
Norristown,	To.,	655	58	45	60	69	64	53	43	47	63	58	54	41
	M.,	334	36	21	32	39	30	30	18	19	24	34	33	18
	F.,	321	22	24	28	30	34	23	25	28	39	24	21	23
North Braddock,	To.,	449	49	37	22	35	48	39	39	37	45	28	25	45
	M.,	195	22	17	9	11	21	22	17	13	23	16	10	14
	F.,	254	27	20	13	24	27	17	22	24	22	12	15	31

Northampton,	To.,	429	34	28	29	31	39	37	29	47	34	42	37	45
	M.,	231	19	18	18	15	20	15	18	29	15	24	14	25
	F.,	198	15	10	11	16	19	17	11	18	19	18	23	21
Oil City,	To.,	425	48	37	37	41	37	42	34	50	29	21	15	34
	M.,	207	21	22	19	15	15	22	20	27	13	8	7	18
	F.,	218	27	15	18	26	22	20	14	23	16	13	8	16
Old Forge,	To.,	631	56	45	67	52	49	45	54	61	48	58	48	48
	M.,	333	28	22	35	31	23	27	31	29	21	34	27	25
	F.,	298	28	23	32	21	26	18	23	32	27	24	21	23
Olyphant,	To.,	436	41	29	25	38	22	36	40	43	55	40	30	43
	M.,	211	18	16	9	17	12	14	17	20	25	21	18	24
	F.,	225	23	13	16	21	10	16	23	23	30	19	12	19
Philadelphia,	To.,	40,867	3,443	3,464	3,648	3,322	3,139	3,185	3,397	3,549	3,482	3,471	3,270	3,497
	M.,	20,867	1,736	1,800	1,849	1,681	1,621	1,591	1,732	1,826	1,810	1,813	1,660	1,748
	F.,	20,060	1,707	1,664	1,799	1,641	1,518	1,594	1,665	1,723	1,672	1,658	1,610	1,749
Phoenixville,	To.,	313	18	26	34	21	29	17	23	28	31	29	26	31
	M.,	149	8	11	14	11	11	8	11	15	16	16	12	16
	F.,	164	10	15	20	10	18	9	12	13	15	13	14	15
Pittsburgh,	To.,	16,156	1,400	1,359	1,405	1,292	1,317	1,316	1,388	1,399	1,322	1,334	1,267	1,357
	M.,	8,169	693	702	673	674	711	655	705	705	684	663	635	638
	F.,	7,987	707	657	732	618	606	661	682	694	638	671	632	689
Pittston,	To.,	674	38	59	59	63	49	43	65	55	43	58	64	58
	M.,	325	21	29	31	36	28	16	32	28	17	26	37	24
	F.,	349	17	30	28	27	21	27	33	27	26	32	27	34
Plymouth,	To.,	486	26	41	41	47	37	48	39	43	40	44	43	37
	M.,	243	12	23	18	25	19	29	24	17	22	18	18	18
	F.,	243	14	18	23	22	18	19	15	26	18	26	25	19
Pottstown,	To.,	306	17	36	20	22	31	28	34	29	20	18	33	18
	M.,	161	10	17	12	14	14	18	17	15	7	11	17	9
	F.,	145	7	19	8	8	17	10	17	14	13	7	16	9
Pottsville,	To.,	505	32	42	42	48	44	47	46	44	36	36	41	47
	M.,	239	20	22	17	27	13	18	19	29	19	13	22	20
	F.,	263	12	20	25	21	31	29	27	15	17	23	19	27
Punxsutawney,	To.,	223	21	20	24	23	14	15	19	16	13	21	18	19
	M.,	114	9	6	11	15	6	8	11	9	8	13	8	10
	F.,	109	12	14	13	8	8	7	8	7	5	8	10	9

BIRTH TABLE 1—Continued.

Registration Area.		All Births.	Month of Birth.											
			Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Rankin,	To.,	317	28	34	27	17	21	18	25	23	29	38	27	30
	M.,	163	17	15	15	8	12	8	16	8	15	20	15	14
	F.,	154	11	19	12	9	9	10	9	15	14	18	12	16
Reading,	To.,	2,407	185	199	188	170	226	197	196	216	214	201	205	210
	M.,	1,244	88	108	92	90	107	104	106	102	116	109	108	114
	F.,	1,163	97	91	96	80	119	93	90	114	98	92	97	96
Ridgway,	To.,	149	9	13	13	9	9	14	21	18	13	9	12	9
	M.,	71	5	4	5	5	6	6	10	10	7	4	6	3
	F.,	78	4	9	8	4	3	8	11	8	6	5	6	6
Rochester,	To.,	189	13	20	26	19	16	11	22	14	14	9	15	10
	M.,	97	5	9	14	11	10	8	9	5	8	3	8	7
	F.,	92	8	11	12	8	6	3	13	9	6	6	7	3
St. Clair (Allegheny Co.),	To.,	152	18	9	10	12	10	14	11	16	5	16	18	13
	M.,	79	12	5	6	6	6	7	6	12	2	5	6	6
	F.,	73	6	4	4	6	4	7	5	4	3	11	12	7
St. Clair (Schuylkill Co.),	To.,	241	27	15	23	18	16	20	18	18	29	15	23	19
	M.,	125	14	8	8	9	10	7	9	12	17	7	10	14
	F.,	116	13	7	15	9	6	13	9	6	12	8	13	5
St. Marys,	To.,	250	22	15	34	22	18	23	14	20	18	26	20	15
	M.,	138	11	11	18	12	10	16	6	12	7	15	10	10
	F.,	112	11	4	16	10	8	10	8	8	11	11	10	5
Sayre,	To.,	278	16	23	25	20	25	20	28	23	28	23	17	30
	M.,	141	7	12	14	13	14	12	8	10	15	7	11	18
	F.,	137	9	11	11	7	11	8	20	13	13	16	6	12
Scottdale,	To.,	140	6	9	13	13	12	6	9	13	10	19	15	15
	M.,	73	4	4	5	4	4	5	6	11	4	9	9	8
	F.,	67	2	5	8	9	8	1	3	2	6	10	6	7

Scranton,	To.,	4,003	323	316	378	321	312	349	373	320	340	327	340	304
	M.,	2,024	172	151	202	165	165	163	190	166	155	159	172	161
	F.,	1,979	151	165	176	156	147	183	183	154	185	168	168	143
Shamokin,	To.,	633	68	61	53	40	57	53	48	51	54	50	50	48
	M.,	330	33	31	33	23	36	28	20	27	29	21	26	23
	F.,	303	35	30	20	17	21	25	28	24	25	29	24	25
Sharon,	To.,	421	27	49	31	35	30	40	46	39	27	33	33	31
	M.,	234	15	29	16	21	15	25	22	20	11	20	24	16
	F.,	187	12	20	15	14	15	15	24	19	16	13	9	15
Sharpsburg,	To.,	253	15	15	26	18	36	23	22	20	11	29	22	22
	M.,	135	7	10	14	8	21	13	11	11	4	14	12	10
	F.,	118	8	5	6	10	15	10	11	9	7	15	10	12
Shenandoah,	To.,	950	65	82	87	74	90	63	88	94	82	68	78	78
	M.,	468	35	34	41	36	49	30	47	43	41	32	33	47
	F.,	482	31	48	46	38	41	33	41	51	41	36	45	31
South Bethlehem (Northampton Co.),	To.,	1,154	106	92	113	78	71	88	101	89	111	105	104	96
	M.,	590	64	52	51	41	37	43	54	47	53	51	48	49
	F.,	564	42	40	62	37	34	45	47	42	58	54	56	47
Steelton,	To.,	411	21	54	30	26	29	35	27	35	39	38	41	36
	M.,	229	12	29	16	13	15	19	19	19	22	24	25	16
	F.,	182	9	25	14	13	14	16	8	16	17	14	16	20
Sunbury,	To.,	316	34	25	28	25	26	19	21	21	29	33	32	23
	M.,	148	14	8	12	11	12	10	8	14	15	17	15	12
	F.,	168	20	17	16	14	14	9	13	7	14	16	17	11
Swissvale,	To.,	212	16	22	15	14	13	25	20	17	18	19	10	23
	M.,	103	5	13	6	8	6	14	9	7	7	12	5	11
	F.,	109	11	9	9	6	7	11	11	10	11	7	5	12
Swoyersville,	To.,	364	23	33	35	37	24	32	42	24	35	25	28	26
	M.,	188	14	16	20	17	14	14	20	12	22	12	14	13
	F.,	176	9	17	15	20	10	18	22	12	13	13	14	13
Tamaqua,	To.,	338	32	33	30	33	28	22	31	25	26	24	27	27
	M.,	179	19	14	21	10	14	13	21	16	14	11	14	12
	F.,	169	13	19	9	23	14	9	10	9	12	13	13	15
Tarentum,	To.,	253	21	14	27	30	21	20	15	18	18	31	20	18
	M.,	133	4	10	13	17	14	7	11	10	7	19	11	10
	F.,	120	17	4	14	13	7	13	4	8	11	12	9	8

BIRTH TABLE 1—Continued.

Registration Area.		All Births.	Month of Birth.											
			Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Taylor,	To.,	426	47	29	31	41	31	38	33	37	38	39	37	25
	M.,	207	22	9	13	24	15	18	13	21	23	20	19	10
	F.,	219	25	20	18	17	16	20	20	16	15	19	18	15
Throop,	To.,	230	17	18	18	12	24	12	30	11	21	18	22	27
	M.,	110	6	7	14	8	10	5	13	8	8	10	9	12
	F.,	120	11	11	4	4	14	7	17	3	13	8	13	15
Titusville,	To.,	123	13	6	10	12	15	5	7	11	15	12	10	7
	M.,	56	5	3	5	3	6	3	4	1	11	7	3	5
	F.,	67	8	3	5	9	9	2	3	10	4	5	7	2
Tyrone,	To.,	230	26	14	26	16	22	28	15	25	11	14	15	18
	M.,	126	11	6	17	9	12	18	6	15	6	10	6	10
	F.,	104	15	8	9	7	10	10	9	10	5	4	9	8
Uniontown (Fayette Co.),	To.,	361	54	27	30	30	28	35	29	29	20	18	39	22
	M.,	181	26	12	17	16	15	23	13	15	10	5	17	12
	F.,	180	28	15	13	14	13	12	16	14	10	13	22	10
Warren,	To.,	313	28	29	34	20	25	24	17	20	49	24	15	28
	M.,	167	14	19	18	11	11	12	11	8	27	11	12	13
	F.,	146	14	10	16	9	14	12	6	12	22	13	3	15
Washington,	To.,	482	36	50	51	40	37	47	42	33	36	38	32	40
	M.,	248	19	20	25	24	25	24	19	14	20	21	18	19
	F.,	234	17	30	26	16	12	23	23	19	16	17	14	21
Waynesboro,	To.,	211	22	17	17	15	16	19	21	20	20	12	14	18
	M.,	118	10	10	11	8	10	11	9	9	14	8	7	11
	F.,	93	12	7	6	7	6	8	12	11	6	4	7	7
West Berwick,	To.,	222	21	9	31	18	12	21	17	18	15	23	14	23
	M.,	107	9	5	14	9	9	10	6	9	9	10	7	10
	F.,	115	12	4	17	9	3	11	11	9	6	13	7	13

West Chester,	To.,	285	20	18	26	37	30	23	24	17	25	26	14	25
	M.,	138	10	7	10	18	12	12	13	13	15	13	5	10
	F.,	147	10	11	16	19	18	11	11	4	10	13	9	15
West Pittston,	To.,	168	19	9	20	12	13	12	9	20	15	12	13	14
	M.,	91	11	4	12	7	6	2	4	11	13	5	9	7
	F.,	77	8	5	8	5	7	10	5	9	2	7	4	7
Wilkes-Barre,	To.,	2,202	188	193	201	184	170	202	156	189	163	174	189	190
	M.,	1,127	102	103	95	88	96	105	82	83	81	86	96	110
	F.,	1,075	86	90	106	96	74	97	74	106	85	88	93	80
Wilkinsburg,	To.,	673	56	55	58	40	72	64	56	72	46	52	47	55
	M.,	349	31	25	30	22	45	38	26	36	25	25	20	25
	F.,	324	25	29	28	18	27	26	30	36	21	27	27	30
Williamsport,	To.,	668	59	44	58	65	63	63	49	43	57	59	46	61
	M.,	332	22	25	35	31	32	24	24	22	29	32	21	35
	F.,	336	37	19	23	35	31	39	25	21	28	27	25	26
Wilmerding,	To.,	240	39	30	16	19	16	16	19	19	18	25	10	22
	M.,	125	14	17	9	11	7	11	14	7	10	7	4	14
	F.,	115	16	13	7	8	9	5	5	12	8	18	6	8
Windber,	To.,	587	46	61	54	59	47	59	43	36	44	42	47	49
	M.,	303	22	31	29	31	24	26	22	17	20	23	25	33
	F.,	284	24	30	25	28	23	33	21	19	24	19	22	16
Winton,	To.,	362	25	33	37	23	31	35	32	23	32	37	21	33
	M.,	182	14	15	17	12	21	17	11	8	20	17	12	18
	F.,	180	11	18	20	11	10	18	21	15	12	20	9	15
York,	To.,	883	69	79	74	73	79	62	69	95	72	74	68	69
	M.,	470	35	40	47	38	47	24	33	53	42	42	34	35
	F.,	413	34	39	27	35	32	38	36	42	30	32	34	34
Counties (Rural).														
Adams,	To.,	584	52	50	56	47	36	55	51	57	50	53	43	34
	M.,	282	26	26	28	26	12	30	27	28	23	21	22	13
	F.,	302	26	24	28	21	24	25	24	29	27	32	21	21
Allegheny,	To.,	5,349	428	434	488	435	456	423	453	445	446	468	434	439
	M.,	2,783	214	203	257	226	223	218	234	216	233	254	232	243
	F.,	2,566	214	231	231	209	233	205	189	229	213	214	202	195
Armstrong,	To.,	1,360	115	124	104	116	108	110	104	120	135	113	118	93
	M.,	690	53	67	56	54	51	56	49	75	63	65	59	42
	F.,	670	62	57	48	62	57	54	55	45	72	48	59	51

BIRTH TABLE 1—Continued.

Registration Area.		All Births.	Month of Birth.											
			Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Beaver,	To.,	595	60	47	46	50	53	65	42	61	50	27	53	41
	M.,	308	34	26	24	21	29	32	21	33	21	12	34	21
	F.,	287	26	21	22	29	24	33	21	28	29	15	19	20
Bedford,	To.,	869	75	60	74	74	71	58	83	55	78	55	75	51
	M.,	470	44	30	29	37	40	33	40	34	39	28	36	20
	F.,	399	31	30	45	37	31	25	43	21	39	27	39	31
Berks,	To.,	1,570	117	128	159	120	155	138	132	136	139	118	114	114
	M.,	801	54	69	84	69	82	64	74	55	73	56	52	70
	F.,	769	63	59	75	51	73	74	58	81	67	62	62	44
Blair,	To.,	867	55	66	82	85	82	75	75	74	72	78	62	61
	M.,	443	27	35	37	38	43	46	39	34	34	45	37	28
	F.,	424	28	31	45	47	39	29	36	40	38	33	25	33
Bradford,	To.,	611	38	47	58	51	54	52	46	58	57	51	54	45
	M.,	313	20	26	30	33	25	27	27	33	32	20	22	18
	F.,	298	18	21	28	18	29	25	19	25	25	31	32	27
Bucks,	To.,	860	56	77	86	73	67	61	79	74	68	70	71	78
	M.,	447	32	42	34	42	31	28	42	38	33	39	39	47
	F.,	413	24	35	52	31	36	33	37	36	35	31	32	31
Butler,	To.,	1,102	91	104	105	95	94	101	78	89	90	93	92	70
	M.,	559	46	53	59	46	44	49	41	42	44	47	48	40
	F.,	543	45	51	46	49	50	52	37	47	46	46	44	30
Cambria,	To.,	2,684	249	249	242	219	218	225	213	210	218	213	236	192
	M.,	1,380	122	132	121	117	101	110	112	114	111	108	134	98
	F.,	1,304	127	117	121	102	107	115	101	96	107	105	102	94
Cameron,	To.,	64	2	7	1	9	7	8	4	8	6	6	3	3
	M.,	31	-------	4	-------	4	4	2	2	4	2	5	2	2
	F.,	33	2	3	1	5	3	6	2	4	4	1	1	1

Carbon,	To.,	620	51	60	49	56	53	46	46	63	55	56	45	40
	M.,	304	22	30	30	30	21	19	19	35	26	27	27	18
	F.,	316	29	30	19	26	32	27	27	28	29	29	18	22
Centre,	To.,	803	42	81	69	82	70	64	84	74	63	62	61	51
	M.,	416	23	48	33	47	33	35	38	36	33	32	32	26
	F.,	387	19	33	36	35	37	29	46	38	30	30	29	25
Chester,	To.,	1,145	98	94	118	82	107	94	91	94	90	93	76	108
	M.,	581	43	54	53	44	56	45	49	47	43	42	47	58
	F.,	564	55	40	65	38	51	49	42	47	47	51	29	50
Clarion,	To.,	635	51	56	65	56	43	51	56	52	50	49	62	44
	M.,	333	26	34	36	30	23	24	33	28	22	27	32	18
	F.,	302	25	22	29	26	20	27	23	24	28	22	30	26
Clearfield,	To.,	1,941	162	137	191	185	176	153	172	163	156	148	140	155
	M.,	993	83	70	96	99	91	80	95	89	76	67	58	89
	F.,	948	79	67	95	86	85	73	77	77	80	81	82	66
Clinton,	To.,	293	30	24	26	31	17	24	21	22	24	22	20	32
	M.,	162	16	13	17	16	8	16	10	16	8	15	11	16
	F.,	131	14	11	9	15	9	8	11	6	16	7	9	16
Columbia,	To.,	539	38	48	44	45	52	53	47	47	36	36	45	48
	M.,	290	22	30	21	21	28	29	24	32	18	21	22	22
	F.,	249	16	18	23	24	24	24	23	15	18	15	23	26
Crawford,	To.,	592	38	52	62	32	54	50	54	75	50	42	42	41
	M.,	310	21	29	32	17	26	23	28	49	24	16	23	22
	F.,	282	17	23	30	15	28	27	26	26	26	26	19	19
Cumberland,	To.,	626	50	49	61	41	53	48	57	61	47	65	50	44
	M.,	323	29	24	35	23	25	25	26	31	25	33	20	27
	F.,	303	21	25	26	18	28	23	31	30	22	32	30	17
Dauphin,	To.,	960	71	83	83	79	85	80	82	82	86	79	64	86
	M.,	500	41	41	38	44	47	38	42	43	43	38	37	48
	F.,	460	30	42	45	35	38	42	40	39	43	41	27	38
Delaware,	To.,	761	59	58	62	60	65	57	69	75	67	58	54	77
	M.,	398	29	27	26	31	40	30	40	40	35	28	25	47
	F.,	363	30	31	36	29	25	27	29	35	32	30	29	30
Elk,	To.,	526	42	46	55	39	52	36	44	59	28	48	36	41
	M.,	278	22	27	33	16	25	20	22	35	12	25	17	24
	F.,	248	20	19	22	23	27	16	22	24	16	23	19	17

BIRTH TABLE 1—Continued.

Registration Area.		All Births.	Month of Birth.											
			Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Erie,	To.,	650	50	56	47	56	51	64	59	59	65	48	43	51
	M.,	302	25	25	24	27	21	29	24	27	30	25	19	26
	F.,	348	25	31	23	29	30	35	35	32	36	23	24	25
Fayette,	To.,	3,497	317	297	318	269	306	274	273	315	281	295	279	273
	M.,	1,841	158	156	183	119	151	149	138	165	144	158	169	151
	F.,	1,656	159	141	135	150	155	125	134	150	137	137	110	122
Forest,	To.,	197	18	12	25	26	21	13	18	13	11	11	15	14
	M.,	109	10	8	14	15	13	6	8	9	5	5	9	7
	F.,	88	8	4	11	11	8	7	10	4	6	6	6	7
Franklin,	To.,	929	67	71	91	68	77	84	79	84	83	74	77	74
	M.,	477	37	38	51	32	31	37	36	44	46	43	45	37
	F.,	452	30	33	40	36	46	47	43	40	37	31	32	37
Fulton,	To.,	223	23	18	15	24	21	16	20	14	19	20	15	18
	M.,	133	12	9	9	15	13	12	13	12	9	11	7	11
	F.,	90	11	9	6	9	8	4	7	2	10	9	8	7
Greene,	To.,	382	25	31	39	38	25	31	26	46	37	29	24	31
	M.,	214	16	13	22	13	18	14	15	27	20	20	18	18
	F.,	168	9	18	17	25	7	17	11	19	17	9	6	13
Huntingdon,	To.,	488	39	32	46	39	43	39	41	44	51	41	37	36
	M.,	240	20	19	27	21	17	19	16	22	25	18	18	18
	F.,	248	19	13	19	18	26	20	25	22	26	23	19	18
Indiana,	To.,	1,768	161	160	136	176	152	131	124	145	147	140	153	143
	M.,	877	80	86	69	85	69	58	56	84	71	68	67	84
	F.,	891	81	74	67	91	83	73	68	61	76	72	86	59
Jefferson,	To.,	1,181	87	114	113	96	111	92	111	84	103	103	89	78
	M.,	654	41	63	73	56	57	51	68	47	52	52	53	41
	F.,	527	46	51	40	40	54	41	43	37	51	51	36	37

Juniata,	To.,	275	14	23	20	23	24	21	36	27	28	21	26	15
	M.,	125	5	13	9	10	8	12	14	12	13	13	11	5
	F.,	150	9	10	11	13	16	12	16	15	15	8	15	10
Lackawanna,	To.,	547	44	43	42	58	44	47	44	49	43	48	35	50
	M.,	296	31	25	17	30	25	25	24	31	20	28	17	25
	F.,	251	13	20	25	28	19	22	20	18	23	20	18	25
Lancaster,	To.,	2,068	152	167	189	166	150	199	179	192	169	162	162	181
	M.,	1,071	78	82	104	94	76	103	102	90	77	85	86	94
	F.,	997	74	85	85	72	74	96	77	102	92	77	76	87
Lawrence,	To.,	751	68	62	77	57	75	47	52	68	68	61	56	57
	M.,	397	36	36	37	31	40	23	33	38	32	32	30	29
	F.,	354	32	26	40	26	35	24	19	30	36	32	26	28
Lebanon,	To.,	770	63	65	57	59	64	56	77	67	74	62	65	60
	M.,	378	33	33	24	26	31	31	36	33	37	29	38	27
	F.,	392	30	33	33	33	33	25	41	34	37	33	27	33
Lehigh,	To.,	1,035	98	85	84	78	79	90	82	86	91	100	79	83
	M.,	517	53	45	49	38	40	46	43	42	44	45	34	37
	F.,	518	45	40	35	40	39	44	39	44	47	54	45	46
Luzerne,	To.,	2,931	246	236	250	248	249	232	229	233	242	280	230	256
	M.,	1,677	141	123	138	131	159	122	157	126	158	159	120	143
	F.,	1,254	105	113	112	117	90	110	72	107	84	121	110	113
Lycoming,	To.,	565	51	47	52	57	53	31	44	48	51	44	33	51
	M.,	281	23	24	27	27	28	15	19	22	23	18	24	29
	F.,	284	28	23	25	30	25	16	25	26	28	26	10	22
McKean,	To.,	383	29	38	46	23	38	28	40	31	34	27	28	21
	M.,	185	10	19	30	4	16	15	25	14	16	10	12	14
	F.,	198	19	19	16	19	22	13	15	17	18	17	16	7
Mercer,	To.,	565	31	50	46	61	49	50	52	43	46	55	43	39
	M.,	296	13	32	20	27	29	29	35	22	18	25	28	18
	F.,	269	18	18	26	34	20	21	17	21	28	30	15	21
Mifflin,	To.,	412	25	25	55	39	30	31	35	33	37	25	39	38
	M.,	206	11	14	27	20	9	16	16	18	19	13	22	21
	F.,	206	14	11	28	19	21	15	19	15	18	12	17	17
Monroe,	To.,	310	34	25	37	31	28	21	23	19	24	24	15	29
	M.,	156	21	11	24	14	13	9	15	7	9	10	8	15
	F.,	154	13	14	13	17	15	12	8	12	15	14	7	14

BIRTH TABLE 1—Continued.

Registration Area.		All Births.	Month of Birth.											
			Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Montgomery,	To.,	1,845	146	151	186	161	157	165	154	156	139	150	138	142
	M.,	920	68	72	83	90	80	92	83	69	72	67	68	76
	F.,	925	78	79	103	71	77	73	71	87	67	83	70	66
Montour,	To.,	113	10	12	9	7	4	10	6	12	7	11	12	13
	M.,	61	7	7	5	5	3	6	4	5	4	6	5	4
	F.,	52	3	5	4	2	1	4	2	7	3	5	7	9
Northampton,	To.,	963	76	77	92	70	91	82	85	88	70	85	72	75
	M.,	489	34	40	48	33	44	49	40	47	37	40	38	39
	F.,	475	42	37	44	37	47	33	45	41	33	45	34	36
Northumberland,	To.,	1,539	123	118	138	132	123	147	129	135	125	117	129	123
	M.,	780	64	68	70	71	65	71	57	74	60	60	62	58
	F.,	759	59	50	68	61	58	76	72	61	65	57	67	65
Perry,	To.,	361	38	32	31	28	30	24	22	33	31	29	37	26
	M.,	189	17	19	21	15	16	13	13	17	13	17	12	16
	F.,	172	21	13	10	13	14	11	9	16	18	12	25	10
Pike,	To.,	72	4	3	9	5	3	13	3	6	7	5	8	6
	M.,	25	1	1	3	2	----	5	----	1	2	5	4	1
	F.,	47	3	2	6	3	3	8	3	5	5	----	4	5
Potter,	To.,	278	19	19	27	24	20	27	28	26	15	30	27	16
	M.,	148	8	6	21	9	13	17	18	14	6	17	10	9
	F.,	130	11	13	6	15	7	10	10	12	9	13	17	7
Schuylkill,	To.,	2,058	161	161	190	200	176	167	205	130	168	153	147	170
	M.,	1,080	85	80	101	108	96	86	105	79	91	79	83	86
	F.,	978	76	81	89	92	80	81	99	81	77	74	64	94
Snyder,	To.,	343	25	38	17	34	33	29	29	38	23	30	22	25
	M.,	174	11	19	10	20	18	10	14	22	12	14	9	15
	F.,	169	14	19	7	14	15	19	15	16	11	16	13	10

Somerset,	To.,	1,478	98	94	166	127	133	116	137	139	117	129	106	116
	M.,	798	50	50	97	67	71	64	65	81	60	69	62	62
	F.,	680	48	44	69	60	62	52	72	58	57	60	44	54
Sullivan,	To.,	248	19	22	16	12	25	13	21	20	28	21	29	22
	M.,	118	10	11	7	2	14	7	13	11	10	14	13	6
	F.,	130	9	11	9	10	11	6	8	9	18	7	16	16
Susquehanna,	To.,	371	28	28	32	33	32	35	39	29	33	35	21	26
	M.,	190	13	17	20	16	15	15	21	16	17	16	11	13
	F.,	181	15	11	12	17	17	20	18	13	16	19	10	13
Tioga,	To.,	591	31	46	72	63	53	49	45	47	51	47	41	43
	M.,	310	14	27	39	38	24	27	22	28	26	27	20	18
	F.,	281	17	19	33	28	29	22	23	19	25	20	21	25
Union,	To.,	220	17	16	18	18	21	17	17	20	16	19	19	22
	M.,	115	11	9	8	11	11	9	8	13	6	11	8	10
	F.,	105	6	7	10	7	10	8	9	7	10	8	11	12
Venango,	To.,	507	39	45	48	37	55	54	45	49	37	38	33	27
	M.,	255	24	18	25	20	32	28	20	25	14	22	15	12
	F.,	252	15	27	23	17	23	26	25	24	23	16	18	15
Warren,	To.,	409	45	36	31	36	34	33	37	39	30	33	25	29
	M.,	224	21	21	14	22	17	24	22	19	12	22	14	16
	F.,	185	25	15	17	14	17	9	15	20	18	11	11	13
Washington,	To.,	2,138	167	170	202	169	178	179	174	181	193	153	198	172
	M.,	1,117	85	93	101	95	91	94	82	100	107	78	104	87
	F.,	1,021	84	77	101	74	87	85	92	81	86	75	94	85
Wayne,	To.,	452	28	24	39	42	43	37	51	36	40	40	29	33
	M.,	229	17	12	21	26	23	13	24	29	15	23	18	17
	F.,	223	11	12	18	16	20	24	27	16	25	17	21	16
Westmoreland,	To.,	3,944	343	352	343	344	348	307	326	318	313	318	282	350
	M.,	2,018	189	170	175	168	163	171	160	161	157	177	139	188
	F.,	1,926	154	182	168	176	185	136	166	157	156	141	143	162
Wyoming,	To.,	253	18	29	11	24	24	16	25	21	26	18	25	16
	M.,	126	8	10	7	12	12	7	18	13	10	13	11	5
	F.,	127	10	19	4	12	12	9	7	8	16	5	14	11
York,	To.,	1,576	124	115	157	147	116	127	125	120	135	121	90	129
	M.,	798	60	65	91	75	68	59	74	59	61	65	47	74
	F.,	778	64	50	66	72	48	68	51	61	74	56	43	65

BIRTH TABLE 2.

Births by nativity and age of mothers for the entire State, for cities and boroughs having more than 5,000 population, for cities and boroughs having less than 5,000 population, and for the rural sections of the State exclusive of all municipalities. (Stillbirths excluded.)

Age of Mother.	State.				Cities and Boroughs Over 5,000.			Boroughs Less Than 5,000.			Rural, Exclusive of all Municipalities.		
	Total entire State.	Total native.	Total foreign.	Total nativity unstated.	Native.	Foreign.	Nativity unstated.	Native.	Foreign.	Nativity unstated.	Native.	Foreign.	Nativity unstated.
All ages,	219,061	137,795	81,072	194	70,981	53,252	111	20,870	8,310	15	45,944	19,510	68
Under 15 years,	76	67	9		39	4		6			22	5	
15-19 years,	18,742	14,261	4,470	11	7,213	2,761	4	2,021	528		5,027	1,181	7
20-24 years,	64,066	41,979	22,041	46	22,625	14,898	25	6,226	2,264	2	13,134	4,879	19
25-29 years,	59,322	35,960	23,305	57	19,236	15,506	32	5,523	2,380	9	11,191	5,409	16
30-34 years,	40,773	24,095	16,644	34	12,061	10,812	18	3,807	1,675	1	8,227	4,157	16
35-39 years,	25,304	14,908	10,375	21	6,996	6,716	15	2,361	1,059		5,611	2,590	5
40-44 years,	8,723	5,358	3,357	8	2,328	2,140	5	786	323		2,244	894	3
45-49 years,	893	541	352		215	218		91	33		235	101	
Over 50 years,	25	13	12		6	4		3	2		4	6	
Age unstated,	1,137	613	507	17	262	193	12	102	36	3	249	278	2

BIRTH TABLE 3.

Number of children born to mothers, including present birth, according to nativity of mother, for the entire State and for certain subdivisions thereof. (Stillbirths excluded.)

	State.				Cities and Boroughs Over 5,000.			Boroughs Less Than 5,000.			Rural, Exclusive of all Municipalities.		
	Total entire State.	Total native.	Total foreign.	Total nativity unstated.	Native.	Foreign.	Nativity unstated.	Native.	Foreign.	Nativity unstated.	Native.	Foreign.	Nativity unstated.
Total,	219,061	137,795	81,072	194	70,981	53,252	111	20,870	8,310	15	45,944	19,510	68
1st child,	55,191	40,165	14,986	40	23,057	10,514	24	5,888	1,493	2	11,220	2,979	14
2d child,	43,946	29,614	14,303	29	16,243	9,846	15	4,455	1,403	4	8,916	3,054	10
3d child,	32,068	20,148	11,890	30	10,175	7,969	17	3,244	1,167	2	6,729	2,754	11
4th child,	24,443	13,999	10,430	14	6,580	6,918	6	2,297	1,071	-------	5,122	2,441	8
5th child,	17,776	9,701	8,057	18	4,324	5,093	9	1,520	904	3	3,857	2,060	6
6th child,	13,293	6,861	6,421	11	2,975	3,997	7	1,036	704	1	2,790	1,720	3
7th child,	9,614	5,157	4,444	13	2,232	2,713	9	748	480	-------	2,177	1,251	4
8th child,	6,439	3,275	3,155	9	1,326	1,874	6	464	349	-------	1,485	932	3
9th child,	4,414	2,272	2,138	4	919	1,267	3	309	227	-------	1,044	644	1
10th child,	2,917	1,510	1,405	2	578	802	1	222	139	-------	710	464	1
11th child,	1,719	907	810	2	355	466	1	129	91	-------	423	253	1
12th child,	1,066	554	508	4	216	296	2	53	55	-------	285	157	2
13th child,	607	320	287	-------	110	169	-------	45	38	-------	165	80	-------
14th child,	325	173	152	-------	68	90	-------	28	17	-------	77	45	-------
15th child,	151	85	66	-------	32	34	-------	9	11	-------	44	21	-------
16th child,	72	39	33	-------	14	18	-------	4	6	-------	21	9	-------
17th child,	34	21	13	-------	9	9	-------	2	1	-------	10	3	-------
18th child,	17	14	3	-------	6	3	-------	-------	-------	-------	8	-------	-------
19th child,	8	5	3	-------	3	3	-------	-------	-------	-------	2	-------	-------
20th child,	4	1	3	-------	-------	2	-------	-------	-------	-------	1	1	-------
21st child,	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	1	-------	-------
23d child,	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------	1	-------	-------
Unstated number of child,	4,957	2,974	1,965	18	1,759	1,169	11	357	154	3	858	642	4

BIRTH TABLE 4.

Number of children living, including present birth, according to nativity of mothers, for the entire State and certain subdivisions thereof. (Stillbirths excluded.)

	State.				Cities and Boroughs Over 5,000.			Boroughs Less Than 5,000.			Rural, Exclusive of all Municipalities.		
	Total entire State.	Total native.	Total foreign.	Total nativity unstated.	Native.	Foreign.	Nativity unstated.	Native.	Foreign.	Nativity unstated.	Native.	Foreign.	Nativity unstated.
Total,	219,061	137,795	81,072	194	70,981	53,252	111	20,870	8,31(	15	45,944	19,510	68
1 child,	64,257	45,390	18,824	43	26,157	13,187	25	6,654	1,857	2	12,579	3,780	16
2 children,	48,035	31,219	16,780	36	16,789	11,519	19	4,775	1,671	3	9,655	3,590	13
3 children,	33,773	20,349	13,392	32	10,082	8,817	17	3,253	1,340	3	7,014	3,235	12
4 children,	24,316	13,698	10,606	12	6,252	6,790	7	2,253	1,147	1	5,193	2,669	5
5 children,	16,847	9,254	7,576	17	4,151	4,634	9	1,375	858	1	3,728	2,084	7
6 children,	10,934	5,858	5,064	12	2,396	3,107	7	926	510	1	2,536	1,447	4
7 children,	6,756	3,712	3,030	14	1,432	1,786	11	561	338	-------	1,719	906	3
8 children,	3,925	2,179	1,743	3	797	1,007	3	321	181	-------	1,061	555	-------
9 children,	2,148	1,260	885	3	432	494	2	162	101	-------	666	290	1
10 children,	1,155	737	417	1	249	245	-------	95	41	-------	393	131	1
11 children,	525	346	179	-------	98	91	-------	41	30	-------	207	58	-------
12 children,	246	167	79	-------	37	47	-------	21	8	-------	109	24	-------
13 children,	79	53	26	-------	13	16	-------	8	7	-------	32	3	-------
14 children,	24	19	5	-------	3	2	-------	1	-------	-------	15	3	-------
15 children,	12	11	1	-------	3	1	-------	1	-------	-------	7	-------	-------
16 children,	6	5	1	-------	-------	1	-------	-------	-------	-------	5	-------	-------
Unstated number of children,	6,023	3,538	2,464	21	2,090	1,508	11	423	221	4	1,025	735	6

BIRTH TABLE 5.

Plural and illegitimate births, according to nativity of mothers, for the entire State and certain subdivisions thereof. (Stillbirths excluded.)

Area.	Nativity.	Twins.	Triplets.	Illegitimates.
State total,	Total,	2,273	17	4,448
	Native,	1,336	11	3,880
	Foreign,	931	6	553
	Unstated,	6		15
Total all municipalities having more than 5,000 population,	Total,	1,269	8	2,692
	Native,	672	6	2,234
	Foreign,	592	2	449
	Unstated,	5		9
Total all municipalities having less than 5,000 population,	Total,	312	3	447
	Native,	202	2	419
	Foreign,	110	1	28
	Unstated,			
Total rural exclusive of all municipalities,	Total,	692	6	1,309
	Native,	462	3	1,227
	Foreign,	229	3	76
	Unstated,	1		6



COMMUNICABLE DISEASES.



COMMUNICABLE DISEASES.

The total of cases of communicable diseases reported during the year was 141,340, which compares very closely with the total for the previous year. Measles increased rather notably, while scarlet fever, diphtheria, whooping cough and German measles were decidedly less prevalent.

The term "Rural" as used in the accompanying Table 2 applies to population beyond the limits of incorporated municipalities.

The distribution by age, sex, nativity and color of the most important reportable diseases is given in detail for the purpose of studying in connection with mortality tables the influences bearing upon the case rate fatalities.

MORBIDITY TABLE 1.

Total cases of communicable diseases reported during the years 1906 to 1915, inclusive.

	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.
Total,	88,326	70,864	113,826	119,903	141,739	122,723	140,158	195,015	140,682	141,340
Actinomycosis,	1	2		3				5	1	2
Anterior poliomyelitis,*					1,112	177	267	141	113	162
Anthrax,	23	26	19	16	19	7	17	29	20	19
Cerebrospinal fever,	341	430	215	130	149	136	160	155	160	117
Chicken pox,	2,949	3,442	5,640	8,341	6,545	8,934	12,603	13,055	16,475	16,512
Diphtheria,	10,870	10,510	12,509	13,133	14,061	16,096	16,617	16,864	16,070	14,645
Epidemic dysentery,	5	3		12	19	230	16	18	45	49
Erysipelas,	1,012	972	1,095	1,143	1,627	1,668	1,548	1,936	2,250	2,097
German measles,	404	100	477	1,145	1,605	409	769	2,575	5,912	822
Glanders,			1	1		2	3	2		
Impetigo contagiosa,†								36	915	1,424
Leprosy,			1	1		3	4		2	
Malarial fever,	99	81	87	88	69	69	146	95	43	52
Measles,	23,729	11,776	37,981	34,925	49,786	33,807	49,967	92,651	26,275	41,368
Mumps,	1,337	1,115	2,548	3,820	6,775	5,255	7,080	7,913	9,113	13,515
Ophthalmia neonatorum,†								11	186	138
Pellagra,*						8	1	5	2	3
Penumonia (true),	6,169	5,282	6,285	7,148	7,975	6,336	5,962	6,076	5,421	5,566
Puerperal fever,	77	57	97	69	92	80	50	52	50	54
Rabies,	8	5	8	8	12	6	2	5	13	5
Scabies,†								14	639	767
Scarlet fever,	7,610	7,699	14,413	15,536	12,981	10,382	10,963	15,434	17,190	9,860
Smallpox,	73	62	77	45	168	159	501	798	748	117
Tetanus,	65	74	85	98	116	77	87	94	75	64
Trachoma,	23	26	74	77	321	95	47	95	230	134
Trichiniasis,	1		2		3	6	10	1	7	3
Tuberculosis,	5,234	6,109	10,418	14,646	14,572	14,535	13,084	12,830	13,432	14,369
Typhoid fever,	24,471	20,080	15,157	11,842	13,835	11,803	9,676	10,520	7,653	8,048
Typhus fever,								1	1	
Uncinariasis,*						7				
Whooping cough,	3,691	3,013	6,637	7,337	9,897	12,436	10,578	13,604	17,641	11,428

*Made reportable in 1910.
†Made reportable in 1913.

MORBIDITY TABLE 2.

Communicable diseases reported in 1915 by months, total, urban and rural.

		Aggregate.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Total,	T.,	141,340	13,394	13,189	15,891	16,011	14,255	12,810	7,261	5,319	6,550	8,834	11,609	16,217
	U.,	107,891	9,970	9,650	12,063	12,616	11,868	11,050	5,812	3,990	4,584	6,049	8,564	11,725
	R.,	33,449	3,424	3,589	3,828	3,395	2,387	1,760	1,449	1,329	1,966	2,785	3,045	4,492
1. Actinomycosis,	T.,	2					1					1		
	U.,	2					1					1		
	R.,													
29. Anterior poliomyelitis,	T.,	162	5	2	1	5	2	3	9	32	46	43	13	1
	U.,	113	5	1	1	4	2	2	7	21	30	32	8	
	R.,	49		1		1		1	2	11	16	11	5	1
2. Anthrax,	T.,	19			3	2	7		2			1	1	3
	U.,	12			3		6					1	1	1
	R.,	7				2	1		2					2
4. Cerebrospinal meningitis,	T.,	117	10	13	19	13	3	5	13	8	10	9	8	6
	U.,	89	9	10	12	9	2	4	13	5	7	7	7	4
	R.,	28	1	3	7	4	1	1		3	3	2	1	2
5. Chicken pox,	T.,	16,512	2,768	2,435	2,803	2,092	1,250	937	273	105	194	478	1,363	1,814
	U.,	12,356	2,135	1,783	2,142	1,678	1,012	797	225	64	127	313	899	1,181
	R.,	4,156	633	652	661	414	238	140	48	41	67	165	464	633
7. Diphtheria,	T.,	14,645	1,598	1,229	1,144	886	876	795	699	725	1,071	1,876	1,988	1,758
	U.,	10,494	1,194	893	861	640	647	584	456	467	737	1,284	1,446	1,285
	R.,	4,151	404	336	283	246	229	211	243	258	334	592	542	473
8. Epidemic dysentery,	T.,	49						2		22	10	13	2	
	U.,	39								20	8	11		
	R.,	10						2		2	2	2	2	
9. Erysipelas,	T.,	2,097	263	232	314	344	203	154	92	47	62	80	105	201
	U.,	1,696	216	166	259	268	160	132	81	44	54	66	86	164
	R.,	401	47	66	55	76	43	22	11	3	8	14	19	37
10. German measles,	T.,	822	68	98	133	162	100	89	42	11	15	28	36	49
	U.,	672	49	90	117	136	91	72	36	9	10	13	21	28
	R.,	150	19	8	16	26	9	8	6	2	5	15	15	21

MORBIDITY TABLE 2—Continued.

		Aggregate.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
11. Glanders,	T.,													
	U.,													
	R.,													
34. Impetigo contagiosa,	T.,	1,424	100	90	108	52	44	48	30	50	217	326	242	117
	U.,	1,254	94	80	103	50	44	47	28	42	190	273	209	94
	R.,	170	6	10	5	2		1	2	8	27	53	33	23
13. Leprosy,	T.,													
	U.,													
	R.,													
14. Malarial fever,	T.,	52			2	1	1	2	4	9	20	8	4	1
	U.,	36						2	4	7	13	5	4	1
	R.,	16			2	1	1			2	7	3		
15. Measles,	T.,	41,368	2,264	2,621	3,930	5,800	6,212	5,967	2,514	839	512	1,195	3,053	6,521
	U.,	33,238	1,554	1,880	3,048	4,809	5,471	5,353	2,109	665	374	822	2,340	4,813
	R.,	8,130	710	741	882	991	741	554	405	174	138	373	713	1,708
16. Mumps,	T.,	13,515	1,825	2,357	2,814	2,196	1,525	880	342	129	147	297	396	607
	U.,	9,815	1,404	1,643	1,976	1,508	1,223	758	262	72	89	189	282	409
	R.,	3,700	421	714	838	688	302	122	80	57	58	108	114	198
33. Ophthalmia neonatorum,	T.,	138	12	20	13	7	9	7	13	10	7	13	21	6
	U.,	124	11	18	11	7	8	7	11	9	6	10	20	6
	R.,	14	1	2	2		1		2	1	1	3	1	
3. Pellagra,	T.,	3	1			2								
	U.,	3	1			2								
	R.,													
17. Pneumonia,	T.,	5,563	516	550	923	889	410	263	112	73	127	202	444	1,054
	U.,	4,885	456	473	777	763	374	249	102	68	122	175	384	942
	R.,	681	60	77	146	126	36	17	10	5	5	27	60	112
18. Puerperal fever,	T.,	54	6	10	8	4	9	4	1	4	4		1	3
	U.,	45	5	7	6	3	7	4	1	4	4		1	3
	R.,	9	1	3	2	1	2							

12. Rabies,	T.,	5								1	1		2	1
	U.,	5								1	1		2	1
	R.,													
19. Relapsing fever,	T.,													
	U.,													
	R.,													
35. Scabies,	T.,	767	73	86	68	79	51	35	14	20	41	139	90	77
	U.,	729	68	75	67	74	51	35	12	20	39	132	85	71
	R.,	38	5	5	1	5			2		2	7	5	6
20. Scarlet fever,	T.,	9,860	1,363	1,082	1,118	1,094	846	575	410	335	450	696	943	1,038
	U.,	6,893	893	723	783	720	626	430	306	238	302	463	696	713
	R.,	2,967	470	359	335	284	220	145	104	97	148	233	247	325
21. Smallpox,	T.,	117	23	5	17	17	14	19	1	3	1	1	4	12
	U.,	52	14	3	7	6	2	2	1	1	1	1	3	11
	R.,	65	9	2	10	11	12	17		2			1	1
22. Tetanus,	T.,	64	2		5	3	8	3	10	9	8	3	6	7
	U.,	45	2		3	3	6	2	8	7	7	2	3	2
	R.,	19			2		2	1	2	2	1	1	3	5
23. Trachoma,	T.,	134	16	7	16	12	8	15	5	10	23	5	8	9
	U.,	79	11	5	14	7	1	13	4	6	3	4	8	3
	R.,	55	5	2	2	5	7	2	1	4	20	1		6
24. Trichiniasis,	T.,	3				1			2					
	U.,	3				1			2					
	R.,													
25. Tuberculosis,	T.,	14,369	1,122	1,160	1,367	1,356	1,256	1,528	1,230	1,193	1,167	987	1,020	983
	U.,	12,588	984	1,034	1,199	1,178	1,118	1,327	1,088	1,024	1,000	847	916	873
	R.,	1,781	138	126	168	178	138	201	142	169	167	140	104	110
26. Typhoid fever,	T.,	8,048	502	395	231	237	363	523	418	745	1,569	1,594	755	716
	U.,	5,021	317	265	136	152	269	411	265	519	858	935	488	412
	R.,	3,027	185	130	101	85	94	112	153	226	711	659	267	304
27. Typhus fever,	T.,													
	U.,													
	R.,													
28. Whooping cough,	T.,	11,428	857	803	854	847	1,057	1,022	1,025	939	848	839	1,104	1,233
	U.,	7,603	548	451	544	598	747	819	791	677	602	463	655	708
	R.,	3,825	309	352	310	249	310	203	234	262	246	376	449	525
Uncinariasis,	T.,													
	U.,													
	R.,													

MORBIDITY TABLE 3—TYPHOID FEVER.

Comparison of cases reported by months for the years 1906 to 1915, inclusive.

	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.
Total,	24,471	20,080	15,157	11,842	13,835	11,803	9,676	10,520	7,653	8,948
January,	2,177	3,099	1,652	939	825	881	894	674	524	502
February,	2,286	2,206	1,204	852	644	1,175	575	580	390	395
March,	1,870	1,178	970	692	642	696	806	361	401	231
April,	2,122	1,126	838	475	549	528	437	459	326	237
May,	1,829	999	583	661	498	481	513	538	371	363
June,	1,198	1,045	619	515	423	454	468	567	362	523
July,	1,404	1,092	945	909	780	721	658	835	547	418
August,	2,026	1,849	1,708	1,544	1,918	1,414	1,156	1,394	909	745
September,	2,342	1,967	2,386	2,014	2,648	1,860	1,027	1,840	1,371	1,569
October,	2,386	2,123	1,702	1,557	2,381	1,586	1,658	1,660	1,148	1,594
November,	1,894	1,830	1,406	1,008	1,510	1,019	834	959	768	755
December,	2,927	1,566	1,144	682	1,017	980	650	713	536	716

MORBIDITY TABLE 4.

Distribution of typhoid fever by age periods, State, urban and rural, and percentages at each age to total cases of each locality.

	Total State cases.	Per cent.	Urban cases.	Per cent.	Rural cases.	Per cent.
All ages,	8,048		5,021		3,027	
Under 5 years,	362	4.5	223	4.4	139	4.6
5 to 9 years,	1,053	13.1	699	13.9	354	11.7
10 to 14 years,	1,137	14.1	728	14.5	409	13.5
15 to 19 years,	1,140	14.2	697	13.9	443	14.6
20 to 24 years,	1,197	14.9	746	14.9	451	14.9
25 to 29 years,	893	11.1	597	11.9	296	9.8
30 to 34 years,	623	7.8	396	7.9	227	7.5
35 to 39 years,	461	5.7	293	5.8	168	5.6
40 to 44 years,	348	4.3	196	3.9	152	5.0
45 to 49 years,	243	3.0	134	2.7	109	3.6
50 to 54 years,	186	2.3	116	2.3	70	2.3
55 to 59 years,	131	1.6	64	1.3	67	2.2
Over 60 years,	157	1.9	76	1.5	81	2.7
Age unstated,	117	1.5	56	1.1	61	2.0

MORBIDITY TABLE 5.

Typhoid fever by nativity and age periods.

	Total all Ages	Under 5	5–9	10–19	20–29	30–39	40–49	50–59	60–69	70–79	Over 80	Age Unstated
Total,	8,048	362	1,053	2,277	2,090	1,084	591	317	125	28	4	117
Native,	6,854	330	967	2,057	1,624	846	503	282	114	27	4	103
Foreign,	936	19	50	145	399	196	65	22	6			4
Unstated,	258	13	36	75	67	42	26	13	5	1		10

MORBIDITY TABLE 6.

Typhoid fever by color and age periods.

	Total all Ages	Under 5	5–9	10–19	20–29	30–39	40–49	50–59	60–69	Over 70	Age Unstated
Total,	8,048	362	1,053	2,277	2,090	1,084	591	317	125	32	117
White,	7,957	358	1,037	2,244	2,076	1,074	582	313	125	32	116
Black,	90	4	16	33	13	10	9	4			1
Unstated,	1				1						

MORBIDITY TABLE 7.

Typhoid fever by sex and color.

	All Colors.	White.	Black.	Color Unstated.
Total,	8,048	7,957	90	1
Males,	4,615	4,571	43	1
Females,	3,433	3,386	47	

MORBIDITY TABLE 8.

Typhoid fever by nativity and sex.

	Total.	Native.	Foreign.	Unstated.
Total,	8,048	6,854	906	288
Males,	4,615	3,782	648	185
Females,	3,433	3,072	258	103

MORBIDITY TABLE 9—DIPHTHERIA.

Comparison of cases reported by months for the years 1906 to 1915, inclusive.

	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.
Total,	10,870	10,510	12,509	13,133	14,061	16,096	16,617	16,864	16,070	14,645
January,	1,042	1,095	1,098	1,251	1,187	1,423	2,974	1,913	1,546	1,508
February,	885	828	952	1,167	994	1,191	1,133	1,421	1,192	1,229
March,	852	769	1,008	1,238	948	1,190	994	1,210	1,104	1,144
April,	703	737	670	847	1,041	963	923	1,175	1,035	886
May,	688	575	672	919	1,044	863	884	1,125	776	876
June,	546	553	597	849	868	897	745	968	872	795
July,	473	473	621	725	750	746	671	782	830	699
August,	461	597	589	789	857	924	968	857	812	725
September,	994	796	1,122	981	1,153	1,358	1,508	1,493	1,504	1,071
October,	1,589	1,283	1,857	1,380	1,681	2,290	1,165	1,932	2,111	1,876
November,	1,458	1,501	1,742	1,434	2,010	2,233	2,460	2,021	2,294	1,908
December,	1,215	1,303	1,581	1,553	1,528	2,018	2,192	1,967	1,994	1,758

MORBIDITY TABLE 10.

Distribution of diphtheria by age periods, State, urban and rural, and percentage at each age to total cases in each locality.

	Total State cases.	Per cent.	Urban cases.	Per cent.	Rural cases.	Per cent.
All ages,	14,645		10,494		4,151	
Under 5 years,	4,832	33.0	3,706	35.3	1,126	27.1
5 to 9 years,	5,227	35.7	3,964	37.8	1,263	30.4
10 to 14 years,	1,911	13.1	1,148	11.0	763	18.4
15 to 19 years,	796	5.4	435	4.1	361	8.7
20 to 24 years,	592	4.0	406	3.9	186	4.5
25 to 29 years,	389	2.7	234	2.5	125	3.0
30 to 34 years,	278	1.9	171	1.6	107	2.6
35 to 39 years,	179	1.2	108	1.0	71	1.7
Over 40 years,	294	2.0	179	1.7	115	2.8
Unstated,	147	1.0	113	1.1	34	0.8

MORBIDITY TABLE 11.

Diphtheria by nativity and age periods.

	Total all Ages	Under 5	5–9	10–19	20–29	30–39	40–49	50–59	60–69	70–79	Over 80	Age Unstated
Total,	14,645	4,832	5,227	2,707	981	457	207	65	15	6	1	147
Native,	13,617	4,438	4,921	2,545	906	411	180	62	13	6		135
Foreign,	657	276	188	81	54	30	17	3	1		1	6
Unstated,	371	118	118	81	21	16	10		1			6

MORBIDITY TABLE 12.

Diphtheria by color and age periods.

	Total all Ages	Under 5	5–9	10–19	20–29	30–39	40–49	50–59	60–69	Over 70	Age Unstated
Total,	14,645	4,832	5,227	2,707	981	457	207	65	15	7	147
White,	14,547	4,810	5,197	2,686	967	452	204	65	15	6	145
Black,	92	22	30	20	12	5	3				
Unstated,	6			1	2					1	2

MORBIDITY TABLE 13.

Diphtheria by sex and color.

	All Colors.	White.	Black.	Color Unstated.
Total,	14,645	14,547	92	6
Males,	6,880	6,848	29	3
Females,	7,765	7,699	63	3

MORBIDITY TABLE 14.

Diphtheria by nativity and sex.

	Total.	Native.	Foreign.	Unstated.
Total,	14,645	13,617	657	371
Males,	6,880	6,399	316	165
Females,	7,765	7,218	341	206

MORBIDITY TABLE 15—SCARLET FEVER.

Comparison of cases reported by months for the years 1906 to 1915, inclusive.

	1906.	1907.	1908.	1909.	1910	1911.	1912.	1913.	1914.	1915.
Total,	7,670	7,699	14,413	15,536	12,981	10,382	10,963	15,434	17,190	9,860
January,	879	713	1,413	1,782	1,671	1,195	967	1,723	1,946	1,363
February,	875	572	1,431	1,608	1,415	1,091	945	1,485	1,965	1,082
March,	758	676	1,590	1,853	1,521	1,180	1,052	1,710	2,540	1,118
April,	687	577	1,282	1,500	1,208	1,136	1,181	1,395	1,978	1,004
May,	701	479	1,105	1,189	1,455	1,091	1,058	1,544	1,511	846
June,	517	495	865	1,042	1,006	733	768	1,197	1,113	575
July,	378	379	617	776	617	407	458	624	665	410
August,	350	414	482	623	515	464	446	450	588	335
September,	425	528	967	786	613	489	547	720	797	450
October,	679	715	1,415	1,139	799	741	912	1,283	1,246	696
November,	687	1,085	1,687	1,640	1,066	878	1,233	1,493	1,442	943
December,	734	1,066	1,559	1,598	1,095	977	1,396	1,810	1,399	1,038

MORBIDITY TABLE 16.

Distribution of scarlet fever by age periods, State, urban and rural, with the percentage in each age period to total cases in each locality.

	Total State cases.	Per cent.	Urban cases.	Per cent.	Rural cases.	Per cent.
All ages,	9,830		6,893		2,967	
Under 5 years,	2,341	23.7	1,720	2.50	621	20.9
5 to 9 years,	4,195	42.6	3,084	44.8	1,112	37.5
10 to 14 years,	1,898	19.3	1,199	17.4	699	23.6
15 to 19 years,	631	6.4	341	5.0	290	9.8
20 to 24 years,	332	3.4	222	3.2	110	3.7
25 to 29 years,	172	1.7	125	1.8	47	1.3
30 to 34 years,	94	0.9	67	0.9	27	0.9
35 to 39 years,	58	0.6	40	0.6	18	0.7
Over 40 years,	47	0.5	30	0.4	17	0.7
Age unstated,	91	0.9	65	0.9	26	0.9

MORBIDITY TABLE 17.

Scarlet fever by nativity and age periods.

	Total all Ages	Under 5	5–9	10–19	20–29	30–39	40–49	50–59	60–69	Over 70	Age Unstated
Total,	9,860	2,341	4,196	2,529	504	152	38	7	1	1	91
Native,	9,280	2,183	3,986	2,395	455	143	35	6	1	1	75
Foreign,	315	92	123	54	30	4	3	1			8
Unstated,	265	66	87	80	19	5					8

MORBIDITY TABLE 18.

Scarlet fever by color and age periods.

	Total all Ages	Under 5	5–9	10–19	20–29	30–39	40–49	50–59	60–69	Over 70	Age Unstated
Total,	9,860	2,341	4,196	2,529	504	152	38	7	1	1	91
White,	9,811	2,327	4,178	2,517	499	152	38	7	1	1	91
Black,	45	13	16	11	5						
Unstated,	4	1	2	1							

MORBIDITY TABLE 19.

Scarlet fever by sex and color.

	All Colors.	White.	Black.	Color Unstated.
Total,	9,860	9,811	45	4
Males,	4,617	4,595	19	3
Females,	5,243	5,216	26	1

MORBIDITY TABLE 20.

Scarlet fever by nativity and sex.

	Total.	Native.	Foreign.	Unstated.
Total,	9,860	9,280	315	265
Males,	4,617	4,334	158	125
Females,	5,243	4,946	157	140

MORBIDITY TABLE 21—TUBERCULOSIS.

Comparison of cases reported by months for the years 1906 to 1915, inclusive.

	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.
Total,	5,234	6,109	10,418	14,646	14,572	14,535	13,084	12,830	13,432	14,369
January,	483	546	802	1,114	1,054	1,331	1,145	1,139	1,182	1,122
February,	367	530	696	1,011	1,072	1,268	1,135	915	917	1,160
March,	374	477	759	1,347	1,455	1,415	1,160	1,136	1,306	1,367
April,	370	450	756	1,209	1,512	1,212	1,253	1,220	1,316	1,356
May,	392	587	744	1,388	1,411	1,295	1,319	1,203	1,267	1,256
June,	474	477	826	1,479	1,118	1,248	1,208	1,170	1,285	1,528
July,	563	475	985	1,622	1,102	1,350	1,188	1,042	1,214	1,230
August,	486	512	952	1,375	1,282	1,081	1,092	1,009	1,030	1,193
September,	401	482	813	1,146	1,137	1,159	940	1,027	929	1,167
October,	499	478	991	993	1,263	1,072	888	1,057	1,106	987
November,	380	476	1,052	965	1,086	1,028	776	960	907	1,020
December,	435	619	1,042	907	1,080	1,076	980	952	973	983

MORBIDITY TABLE 22.

Distribution of tuberculosis by age periods, State, urban and rural.

	Total State cases.	Urban cases.	Rural cases.
All ages,	14,369	12,588	1,781
Under 5 years,	355	319	36
5 to 9 years,	697	584	113
10 to 14 years,	714	596	118
15 to 19 years,	1,087	925	162
20 to 24 years,	1,868	1,624	244
25 to 29 years,	1,914	1,666	248
30 to 34 years,	1,719	1,515	204
35 to 39 years,	1,443	1,288	155
40 to 44 years,	1,125	999	126
45 to 49 years,	841	739	102
50 to 54 years,	656	561	95
55 to 59 years,	428	375	53
60 to 64 years,	323	282	41
65 to 69 years,	173	148	25
70 to 74 years,	82	72	10
Over 75 years,	65	50	15
Age unstated,	879	845	34

MORBIDITY TABLE 23.

Tuberculosis by nativity and age periods.

	Total all Ages	Under 5	5–9	10–19	20–29	30–39	40–49	50–59	60–69	Over 70	Age Unstated
Total,	14,369	355	697	1,801	3,782	3,162	1,966	1,084	496	147	879
Native,	9,452	274	598	1,471	2,537	2,036	1,258	643	303	92	240
Foreign,	3,367	29	75	253	1,046	908	524	332	128	33	39
Unstated,	1,550	52	24	77	199	218	184	109	65	22	600

MORBIDITY TABLE 24.

Tuberculosis by age and color.

	Total all Ages	Under 5	5–9	10–19	20–29	30–39	40–49	50–59	60–69	Over 70	Age Unstated
Total,	14,369	355	697	1,801	3,782	3,162	1,966	1,084	496	147	879
White,	12,810	330	671	1,709	3,555	2,919	1,768	991	431	146	290
Black,	406	8	21	61	107	101	64	21	10	1	12
Unstated,	1,153	17	5	31	120	142	134	72	55	----	577

MORBIDITY TABLE 25.

Tuberculosis by sex and color.

	All Colors.	White.	Black.	Color Unstated.
Total,	14,369	12,810	406	1,153
Males,	8 304	7,324	222	758
Females,	6,065	5,486	184	395

MORBIDITY TABLE 26.

Tuberculosis by nativity and sex.

	Total.	Native.	Foreign.	Unstated.
Total,	14,369	9,452	3,367	1,550
Males,	8,304	5,144	2,166	944
Females,	6,065	4,308	1,201	556



MARRIAGES.



MARRIAGES.

A total of 65,677 marriages were recorded during the year. The number of persons married per 1,000 of population was 15.7. With the exception of 1908, this was the lowest rate existing during the ten-year period 1906 to 1915, inclusive. The average age of brides at first marriage was 22.7 years and of grooms 25.8 years.

The following general Marriage Tables for the year are presented:

Table 1. Marriages for the entire State and for each county, by months, for the year 1915.

Table 2. The number of persons married per 1,000 of population by counties for each year of the ten-year period 1906 to 1915, inclusive.

Table 3. Marriages by ages and nativity of brides and grooms for the year 1915.

Table 4. Percentage of brides and grooms of first marriages in each age period, based on the total for the year at all ages.

Table 5. Percentage of marriages in each month of the year, based on the total yearly marriages, for the years 1906 to 1915, inclusive.

Table 6. Marriages and re-marriages by ages and nativity of brides and grooms.

Table 7. Dissolution of prior marriages by ages of brides and grooms.

MARRIAGE TABLE 1.

Marriages in the entire State and for each county, by month of marriage.

	Total marriages.	Month of Marriage.											
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
Entire State,	65,677	5,072	4,657	3,266	5,466	5,075	8,280	4,676	4,791	6,347	6,334	6,595	5,118
Counties.													
Adams County,	188	18	15	11	24	11	12	13	14	14	13	23	20
Allegheny County,	10,257	776	714	419	760	820	1,334	738	841	1,054	993	1,158	650
Armstrong County,	547	18	23	37	44	35	62	37	34	78	56	59	64
Beaver County,	740	59	49	37	47	60	84	66	52	79	74	70	63
Bedford County,	233	19	18	11	25	23	19	11	18	19	28	13	29
Berks County,	1,510	106	117	90	137	120	177	100	104	130	129	150	150
Blair County,	832	65	67	35	53	62	93	59	60	79	68	97	94
Bradford County,	450	31	28	32	44	32	55	35	30	35	44	38	46
Bucks Couknty,	458	23	45	28	29	24	75	18	20	52	54	43	47
Butler County,	589	31	30	36	49	44	83	54	40	62	54	58	48
Cambria County,	1,347	109	117	59	111	128	158	79	106	131	117	140	92
Cameron County,	73	7	3	5	8	4	10	1	6	12	3	7	7
Carbon County,	494	50	40	14	40	40	51	33	36	59	59	38	34
Centre County,	257	20	23	17	22	22	21	21	16	18	27	20	30
Chester County,	658	45	45	64	57	44	65	45	56	56	63	59	59
Clarion County,	224	16	13	12	15	12	32	23	20	25	23	18	15
Clearfield County,	682	59	47	41	54	59	94	78	51	48	50	62	48
Clinton County,	297	27	16	20	22	30	39	18	20	27	30	27	21
Columbia County,	340	31	22	33	30	19	24	25	20	22	33	40	41
Crawford County,	508	21	35	36	48	34	68	33	43	50	47	41	52

Cumberland County,	327	23	28	34	23	21	37	23	26	29	15	25	43
Dauphin County,	1,263	99	94	81	95	101	120	89	86	105	131	115	147
Delaware County,	1,068	56	91	46	104	55	139	73	79	125	104	112	84
Elk County,	253	14	28	10	16	19	31	19	24	26	24	29	13
Erie County,	1,064	77	67	54	84	86	152	85	88	111	110	101	49
Fayette County,	1,132	96	65	34	93	101	132	90	87	107	115	111	101
Forest County,	50	2	2	3	4	4	10	2	3	7	1	6	6
Franklin County,	317	22	18	29	25	20	30	12	25	31	26	37	42
Fulton County,	50	2	7	10	5	3	3	3	3	4	3	4	3
Greene County,	152	9	7	6	9	9	18	13	11	24	12	12	2
Huntingdon County,	283	16	17	25	18	19	34	22	15	30	20	26	41
Indiana County,	510	35	46	27	48	37	54	33	27	47	44	48	64
Jefferson County,	467	35	30	31	38	33	58	41	30	56	48	35	32
Juniata County,	104	9	4	14	7	6	12	4	6	8	10	10	14
Lackawanna County,	2,734	249	208	100	223	207	347	227	208	254	279	269	163
Lancaster County,	1,357	104	90	102	133	75	152	84	70	104	115	172	156
Lawrence County,	740	51	54	49	66	57	79	52	56	68	69	67	72
Lebanon County,	478	44	26	27	50	30	59	26	26	40	49	40	61
Lehigh County,	1,526	132	118	83	139	145	156	107	90	131	142	137	146
Luzerne County,	2,876	278	270	92	240	256	376	256	240	264	282	281	41
Lycoming County,	662	42	34	56	52	45	91	48	47	53	54	66	74
McKean County,	288	18	13	10	24	22	45	19	22	28	20	34	33
Mercer County,	610	34	42	41	37	56	104	45	44	52	57	60	38
Mifflin County,	209	14	8	21	12	15	22	12	10	18	19	26	32
Monroe County,	204	21	6	12	16	18	26	15	16	25	19	21	9
Montgomery County,	1,191	94	66	62	106	73	181	76	81	126	129	113	84
Montour County,	135	11	11	13	12	7	13	11	7	8	13	10	19
Northampton County,	1,283	97	90	44	118	87	145	123	94	125	138	118	104
Northumberland County,	923	71	93	40	61	95	91	69	81	79	90	69	84
Perry County,	144	9	8	12	14	15	12	14	10	9	9	17	15
Pike County,	30	2	1	1	-------	3	8	3	1	4	2	3	2
Potter County,	145	12	6	7	15	8	20	11	12	8	11	17	18
Schuylkill County,	1,544	185	144	55	122	145	201	32	85	152	154	155	114
Snyder County,	117	8	17	10	9	9	6	6	12	11	10	10	9
Somerset County,	459	39	42	20	52	42	54	21	30	44	30	47	38
Sullivan County,	65	5	5	7	5	9	9	8	1	3	7	4	2
Susquehanna County,	265	16	16	13	19	24	28	19	21	28	28	21	32
Tioga County,	316	21	20	27	17	22	33	16	30	34	29	32	35
Union County,	170	17	13	13	18	5	29	8	9	19	8	14	17
Venango County,	460	34	36	23	35	33	53	44	31	46	42	33	50

MARRIAGE TABLE 1—Continued.

	Total marriages.	Month of Marriage.											
		January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.
Warren County,	289	12	18	10	31	26	39	28	23	24	28	29	21
Washington County,	809	66	72	39	68	77	78	88	78	88	87	95	63
Wayne County,	173	6	5	6	22	11	30	11	5	23	24	17	13
Westmoreland County,	1,750	154	117	86	132	163	189	150	142	186	156	156	119
Wyoming County,	93	2	3	9	8	8	18	4	6	13	8	9	5
York County,	1,068	87	66	72	106	79	107	67	60	94	118	86	127
Philadelphia,	14,750	1,111	968	663	1,316	1,080	2,093	980	1,046	1,426	1,480	1,535	1,052

MARRIAGE TABLE 2.

Number of persons married per 1,000 of population by counties, for each year of the ten-year period 1906-1915, inclusive.

	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.
Entire state,	17.1	17.0	15.3	15.9	16.2	15.9	16.3	17.1	16.4	15.7
Counties.										
Adams County,	12.3	12.2	12.8	12.0	13.4	12.1	13.4	12.4	10.9	10.9
Allegheny County,	20.1	22.1	17.0	19.0	20.4	19.2	19.5	21.6	19.8	17.1
Armstrong County,	19.2	16.9	16.4	17.7	17.1	14.0	15.9	16.8	14.8	14.5
Beaver County,	18.2	20.1	16.2	18.3	16.2	15.5	16.7	17.9	16.7	16.4
Bedford County,	12.1	13.5	11.8	10.1	11.4	11.8	11.7	9.3	9.9	12.0
Berks County,	19.5	18.7	15.9	16.5	15.8	15.2	15.3	16.6	16.4	16.0
Blair County,	20.8	21.1	15.0	16.5	15.0	15.5	15.8	15.3	14.2	15.2
Bradford County,	9.0	10.6	14.6	13.4	14.0	15.4	15.8	15.0	17.5	16.9
Bucks County,	11.5	11.8	11.4	12.1	15.1	12.6	11.3	12.5	13.6	11.5
Butler County,	17.5	21.2	18.5	17.3	11.2	4.3	13.6	15.3	14.6	15.6
Cambria County,	22.0	22.5	16.4	16.9	17.6	13.8	14.6	16.4	14.0	13.6
Cameron County,	17.3	15.6	16.4	13.0	13.0	15.3	15.6	19.6	15.8	18.3
Carbon County,	16.2	15.2	18.2	18.2	18.3	18.6	17.9	19.8	19.3	17.2
Centre County,	16.7	15.2	13.2	14.2	15.2	13.1	12.9	13.6	12.2	11.7
Chester County,	15.1	13.8	11.8	11.4	11.0	11.4	10.6	12.2	11.8	11.3
Clarion County,	13.4	12.7	14.5	13.5	12.8	12.5	14.0	13.8	11.1	12.0
Clearfield County,	14.9	15.8	15.4	15.0	14.7	14.8	15.4	14.9	14.0	13.5
Clinton County,	16.1	15.9	15.3	14.1	15.5	15.4	16.3	17.3	15.1	18.1
Columbia County,	16.1	16.7	16.2	15.5	16.1	13.4	16.3	15.3	14.1	12.8
Crawford County,	13.1	13.5	15.3	16.0	18.3	17.3	18.5	16.5	17.9	16.8
Cumberland County,	14.7	15.3	14.1	11.8	12.7	10.4	11.1	11.6	10.7	11.5
Dauphin County,	23.2	22.7	18.7	19.4	19.8	17.5	18.6	18.7	16.9	17.0
Delaware County,	16.1	15.2	12.0	13.2	15.1	14.7	13.6	16.1	15.2	16.4
Elk County,	11.4	11.1	11.4	9.9	14.3	13.8	14.2	11.6	13.0	13.4
Erie County,	13.1	14.3	13.4	15.9	17.3	16.4	17.1	19.6	19.0	17.1
Fayette County,	19.0	18.7	13.1	15.9	14.9	13.5	13.6	16.3	12.8	11.5
Forest County,	8.0	8.7	9.9	5.7	9.7	10.0	12.9	9.6	11.0	11.5
Franklin County,	13.5	13.3	12.4	11.8	12.3	12.5	11.4	10.9	10.1	10.1
Fulton County,	11.2	10.5	10.0	10.8	13.2	11.4	11.7	11.7	12.3	10.5
Greene County,	12.3	14.1	14.0	14.8	11.6	12.1	13.7	9.6	10.9	10.5
Huntingdon County,	17.8	17.8	15.0	12.8	13.4	13.1	14.0	15.2	12.9	14.0
Indiana County,	22.0	22.2	23.4	21.9	15.6	15.2	16.1	15.0	14.9	13.0
Jefferson County,	14.1	13.9	13.8	12.3	15.7	15.2	15.1	14.8	14.9	14.3
Juniata County,	17.9	17.7	15.0	15.0	16.7	17.0	15.0	14.7	14.1	14.3
Lackawanna County,	19.2	17.3	18.4	18.4	18.2	18.3	18.3	18.7	19.0	18.6
Lancaster County,	15.7	15.9	15.6	14.7	15.2	15.3	15.3	15.5	15.7	15.8
Lawrence County,	16.8	16.9	15.8	17.0	20.6	19.0	20.6	22.3	20.1	19.3
Lebanon County,	19.0	17.3	17.8	17.4	18.3	18.0	15.9	16.7	15.9	15.2
Lehigh County,	24.4	27.2	22.1	22.6	21.7	23.0	21.5	20.9	20.9	23.2
Luzerne County,	15.1	14.5	15.8	15.5	16.1	16.0	15.9	17.5	17.1	14.8
Lycoming County,	14.3	13.8	14.0	16.6	15.3	16.0	16.2	15.7	16.5	15.9
McKean County,	6.6	7.8	9.7	10.9	11.7	13.1	11.5	17.7	14.3	12.5
Mercer County,	18.1	19.6	13.6	16.0	15.6	11.3	14.5	15.0	14.2	14.0
Mifflin County,	21.3	20.9	15.9	15.3	15.1	11.6	13.7	14.3	20.0	13.8
Monroe County,	16.7	14.4	9.3	15.6	14.7	16.0	17.2	15.1	16.0	17.1
Montgomery County,	15.1	14.3	12.3	12.6	12.7	11.6	11.6	13.0	13.9	12.8
Montour County,	12.7	14.0	17.6	16.7	15.4	18.0	17.0	16.0	16.2	18.6
Northampton County,	18.3	19.9	17.4	17.7	16.0	17.4	17.8	18.7	18.9	18.0
Northumberland County,	16.2	16.9	17.3	15.5	15.2	16.4	15.9	16.2	16.2	15.1
Perry County,	11.7	15.5	12.1	11.2	11.2	12.0	12.0	10.0	10.6	12.5
Philadelphia County,	17.7	17.5	14.4	15.2	16.4	17.5	17.6	18.2	18.1	17.5
Pike County,	5.6	6.8	9.6	7.0	9.9	7.5	9.9	10.2	7.5	7.8
Potter County,	7.4	6.0	10.2	9.8	11.1	12.1	10.8	11.9	11.2	9.9
Schuylkill County,	17.0	17.9	17.4	17.1	15.3	15.7	15.2	15.0	16.4	13.6
Snyder County,	18.9	17.6	16.7	13.1	14.5	14.2	13.6	16.2	15.4	14.1
Somerset County,	17.8	17.8	14.8	15.6	14.2	13.8	12.8	14.3	13.5	11.9
Sullivan County,	10.6	9.1	10.2	12.0	11.8	12.0	10.3	11.6	12.9	12.0
Susquehanna County,	11.4	13.0	14.8	13.4	12.9	13.5	14.3	16.1	14.8	14.5
Tioga County,	8.3	7.8	12.3	12.6	13.0	12.4	12.6	12.0	13.6	15.9
Union County,	15.1	15.7	14.0	14.0	15.8	13.9	15.0	16.6	18.4	21.9

MARRIAGE TABLE 2—Continued.

	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.
Venango County,	16.8	16.6	15.5	16.1	14.8	15.6	16.3	18.2	15.0	15.4
Warren County,	9.2	10.0	14.0	13.5	14.4	14.3	16.3	14.4	14.3	14.4
Washington County,	19.6	18.0	15.5	16.4	13.6	13.1	13.3	13.3	12.6	10.5
Wayne County,	10.1	9.0	11.4	12.1	13.4	12.4	12.9	14.5	13.4	12.0
Westmoreland County,	17.1	16.6	14.1	15.7	14.0	13.8	15.0	16.1	14.9	13.0
Wyoming County,	12.5	10.6	11.0	12.7	15.3	14.5	13.1	12.9	19.2	12.6
York County,	17.8	16.0	15.1	16.1	15.6	15.2	15.5	14.8	14.8	14.6

MARRIAGE TABLE 3.

Marriages by ages and nativity of brides and grooms for the year 1915.

	Brides.				Grooms.			
	Total.	Native.	Foreign.	Nativity unstated.	Total.	Native.	Foreign.	Nativity unstated.
Total,	65,677	48,056	15,828	1,793	65,677	45,948	18,070	1,659
Age Periods.								
—15,	89	62	25	2				
15—19,	13,788	10,781	2,454	553	2,443	2,280	97	85
20—24,	31,874	21,787	9,373	714	28,651	20,216	7,638	757
25—29,	10,407	8,210	1,956	241	18,752	11,898	6,453	401
30—34,	4,123	3,189	824	110	6,882	4,908	1,821	153
35—39,	2,369	1,802	511	56	3,628	2,652	877	99
40—44,	1,256	942	278	36	2,020	1,547	431	42
45—49,	806	581	205	20	1,267	938	298	31
50—54,	395	283	93	19	789	588	175	26
55—59,	243	178	52	13	532	401	111	20
60—64,	127	98	21	8	305	223	72	10
65—69,	56	43	10	3	175	140	27	8
70+,	24	17	4	3	155	118	23	14
Age unstated,	120	83	22	15	78	59	17	2

MARRIAGE TABLE 4.

Percentage of brides and grooms for first marriages in each age period on the total for the year at all ages.

	Brides.	Grooms.
Total,	100.0	100.0
Age Periods.		
Under 15 years,	0.1	0.0
15 to 19 years,	23.0	5.0
20 to 24 years,	52.4	48.4
25 to 29 years,	15.8	29.4
30 to 34 years,	4.9	9.4
35 to 39 years,	2.0	3.9
40 to 44 years,	0.9	1.7
45 to 49 years,	0.4	0.7
50 years and over,	0.3	0.4
Age unstated,	0.2	0.1

MARRIAGE TABLE 5.

Percentage of marriages in each month of the year based on the total yearly marriages, for the ten-year period 1906-1915, inclusive.

Months.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	1914.	1915.
January,	7.4	7.7	7.8	7.6	8.0	7.5	7.4	7.9	7.8	7.7
February,	8.1	6.8	8.7	7.8	6.5	8.6	7.5	6.0	8.1	7.1
March,	5.0	5.3	5.9	5.3	5.7	5.1	4.9	6.1	4.9	5.0
April,	8.3	8.9	7.5	7.8	8.5	7.6	8.2	8.5	8.2	8.2
May,	6.8	7.2	6.9	7.3	7.2	7.3	6.8	7.6	7.7	7.7
June,	12.8	13.4	12.6	12.7	13.5	13.2	12.2	13.2	13.1	12.5
July,	6.8	7.1	6.8	6.9	7.2	7.0	6.8	7.6	6.9	7.1
August,	7.4	7.5	7.6	7.5	7.5	7.6	7.8	7.6	7.8	7.2
September,	10.0	9.6	9.3	9.7	9.2	9.2	9.6	9.5	9.5	9.7
October,	10.2	10.1	9.4	9.7	9.7	9.5	10.2	9.6	9.8	9.6
November,	9.8	9.6	9.4	9.9	9.6	9.9	10.4	9.8	9.5	10.3
December,	7.4	7.4	8.1	7.8	7.4	7.5	8.2	6.6	6.7	7.8

MARRIAGE TABLE 6.

Marriages and re-marriages by ages of brides and grooms.

	Brides.					Grooms.				
	Total.	First.	Second.	Third.	Fourth.	Total.	First.	Second.	Third.	Fourth.
Total,	65,677	59,561	5,970	141	2	65,677	58,804	6,677	194	2
Age Periods.										
—15,	89	89								
15—19,	13,788	13,756	32			2,443	2,443			
20—24,	31,874	31,228	644	2		28,651	28,500	151		
25—29,	10,407	9,195	1,205	7		18,752	17,913	833	6	
30—34,	4,123	2,962	1,143	18		6,882	5,719	1,157	6	
35—39,	2,369	1,279	1,069	21		3,628	2,393	1,216	19	
40—44,	1,256	555	684	17		2,029	1,040	949	31	
45—49,	806	250	539	17		1,267	448	796	23	
50—54,	395	84	290	21		789	157	602	29	1
55—59,	243	43	179	21		532	70	432	30	
60—64,	127	26	99	8		305	30	255	18	1
65—69,	56	5	43	6	2	175	18	142	15	
70+,	24	2	20	2		155	8	130	17	
Age unstated,	120	96	23	1		78	65	13		

MARRIAGE TABLE 7.

Dissolution of prior marriages by ages of brides and grooms.

	Brides.			Grooms.		
	Total.	Death.	Divorce.	Total.	Death.	Divorce.
Total,	6,113	4,211	1,902	6,873	5,276	1,597
Age Periods.						
15—19,	32	14	18			
20—24,	646	336	310	151	88	63
25—29,	1,212	677	535	839	525	314
30—34,	1,161	746	415	1,163	757	396
35—39,	1,090	805	285	1,235	879	356
40—44,	701	545	153	980	773	207
45—49,	556	446	110	819	692	127
50—54,	311	267	44	632	557	75
55—59,	200	186	14	462	434	28
60—64,	107	101	6	275	257	18
65—69,	51	48	3	157	150	7
70+,	22	22		147	144	3
Age unstated,	24	18	6	13	10	3



DIVISION OF LABORATORIES AND EXPERIMENTAL STATION.

JAMES B. RUCKER, JR., M. D., *Director.*



REPORT OF THE LABORATORIES.

A summary of the work of the year shows the largest number of specimens examined in the history of the Laboratories. The increase appears in every department of work. Especially is this marked in the number of specimens received for the Wassermann test, the increase being from 93 in the seven months of 1914, in which such tests were made, to 2,731 tests in 1915.

Herewith is submitted a tabulation of the number and kinds of specimens received for examination, listed with the total number for each month during the year, and showing a grand total of 23,617 specimens. This total amounts to 6,411 more than the number received at the Laboratories last year, which held the record for the greatest number of specimens ever received since the opening of the Laboratories.

During the year 24,629 ampoules of tubercle bacilli products were made and sent out to the one hundred and sixteen State Tuberculosis Dispensaries and to the three Sanatoria of the Pennsylvania Department of Health; 21,396 of these ampoules contained one dose each of Tubercle Bacilli Extract or "Fluid of Dixon," while 3,233 contained one dose each of Suspension of Dead Tubercle Bacilli (degreased).

SPECIMENS EXAMINED IN THE LABORATORIES DURING THE YEAR 1915.

	A.	B.	C.	D.	E.	F.	G.	H.	J.	K.	S.	Total.
January,	2	65	655	43	22	33	11	477	6	46	23	1,383
February,	3	57	727	57	17	31	5	368	6	68	26	1,365
March,	1	43	913	37	22	35		506	6	27	26	1,610
April,	2	41	839	43	29	31	4	514	4	48	51	1,606
May,	4	114	844	52	20	43	5	541	14	38	323	1,998
June,	5	131	811	59	23	61	1	641	11	24	361	2,128
July,	4	111	716	43	25	42		597	9	14	318	1,879
August,	9	159	721	52	27	41	11	514	17	18	335	1,904
September,	22	310	789	71	17	48	13	1,017	48	18	310	2,663
October,	7	337	632	50	14	37	21	1,319	19	46	335	2,817
November,	6	140	636	46	14	36		801	24	97	327	2,157
December,	3	302	565	43	20	48	6	739	15	64	302	2,107
The year,	68	1,810	8,878	596	250	486	77	8,034	179	508	2,731	23,617

A Malaria.
B Typhoid.
C Sputum.
D Urine.
E Pathological fluids.
F Pathological growths.
G Milk.
H Water.
J Feces.
K Miscellaneous.
S Wassermann.

43—16—1918

Water:—There were 8,034 examinations of water the past year. The places by counties appear in the following:

WATER LIST.

ADAMS COUNTY.
- Abbottstown, 3
- East Berlin, 4
- Gettysburg, 6
- Liberty Township, 5
- Littlestown, 24
- Tyrone Township, 3

ALLEGHENY COUNTY.
- Avalon, 2
- Coraopolis, 2
- Braddock, 13
- Bridgeville, 5
- Camden, 3
- Carnegie, 5
- Collier Township, 6
- Fairhaven, 5
- Gibsonia, 3
- Homestead, 2
- McKees Rocks, 8
- Millvale, 8
- Oakmont, 23
- Presto, 10
- Port View, 4
- Scott Township, 6
- Verona, 9

ARMSTRONG COUNTY.
- Ford City, 27
- Furnace Run, 4
- Kittanning, 75
- Leechburg, 1
- Widnoon, 3

BEAVER COUNTY.
- Beaver Falls, 3
- Cannelton, 9
- Hopewell Township, 3
- New Brighton, 6
- South Heights, 6

BEDFORD COUNTY.
- Everett, 10
- Fishertown, 6
- Bedford, 5

BERKS COUNTY.
- Birdsboro, 5
- Centre Township, 12
- Douglassville, 4
- Fleetwood, 9
- Hamburg, 604
- Host, 3
- Kutztown, 39
- Mohnton, 6
- Muhlenberg Township, 3
- Oley, 3
- Perry Township, 4
- Pine Forge, 3
- Reading, 18
- Ruscombmanor Township, 2
- Penn Township, 5
- Sinking Spring, 11
- Stony Run, 3
- West Reading, 18
- Washington Township, 5
- Wernersville, 315
- Windsor Township, 2

BLAIR COUNTY.
- Altoona, 28
- Eldorado, 2
- Lakemont, 3
- Shellytown, 3
- Tyrone, 3
- Williamsburg, 17

BRADFORD COUNTY.
- Burlington Township, 2
- Canton, 3
- Springfield Township, 1
- Sayre, 17
- Towanda, 5
- Troy, 27

BUCKS COUNTY.
- Bristol, 139
- Doylestown, 6
- Edgely, 5
- Finland, 1
- George School, 3
- Haycock Township, 4
- Hilltown Township, 3
- Ivyland, 19
- Langhorne, 6
- Milford Township, 1
- Morrisville, 6
- Neshaminy, 5
- New Britain, 3
- Newtown, 4
- Northampton Township, 4
- Perkasie, 3
- Quakertown, 12
- Southampton, 9
- Sellersville, 5
- Tinicum Township, 2

BUTLER COUNTY.
- Brady Township, 12
- Butler, 17
- Conoquenessing, 3
- Forestville, 3
- Mars, 16
- Oakland, 7
- Winfield, 2

CAMBRIA COUNTY.
- Barnesboro, 12
- Cambria City, 2
- Carrolltown, 4
- Conemaugh, 19
- Coopersdale, 1
- Cresson, 97
- Dale Borough, 2
- Ebensburg, 4
- Elton, 2
- Emeigh, 4
- Franklin, 6
- Gallitzin, 6
- Hastings, 6
- Johnstown, 174
- Kernville, 1
- Kinport, 4
- Lower Yoder Township, 3
- Morrellville, 14
- Moxham, 1
- Nanty Glo, 5
- Richland Township, 5
- Roxbury, 1
- South Fork, 6
- Susquehanna Township, 2
- East Taylor Township, 8
- West Taylor Township, 3
- Taylor Township, 5
- Twin Rocks, 5
- Woodvale, 3

CARBON COUNTY.

Rockport,	4
Summit Hill,	6
Weatherly,	4

CENTRE COUNTY.

Bellefonte,	4
Retort,	3
Rush Township,	1
Stormstown,	2

CHESTER COUNTY.

Berwyn,	5
Coatesville,	51
Cochranville,	3
Devault,	6
Downingtown,	5
East Bradford Township,	1
East Fallowfield Township,	6
Frazier,	5
Landenberg,	5
Lincoln,	2
Malvern,	9
New London,	3
Phoenixville,	6
Spring City,	160
Schuylkill Township,	3
Strafford,	4
Toughkenamon,	4
West Chester,	34
West Grove,	14

CLARION COUNTY.

Canton,	6
Fairmount City,	3
Knox,	5
New Bethlehem,	7
Richland Township,	3

CLEARFIELD COUNTY.

Mahaffey,	3
Ramey,	6
Newtonburg,	3

CLINTON COUNTY.

Farwell,	5
Renovo,	30

COLUMBIA COUNTY.

Bloomsburg,	6
Catawissa,	6
Maine Township,	2
Mt. Pleasant Township,	4

CRAWFORD COUNTY.

Atlantic,	3
Centerville,	1
Dalesford,	1
Espyville,	1
Fairfield Township,	1
Hartstown,	3
Linesville,	11
Saegertown,	3

CUMBERLAND COUNTY.

Boiling Springs,	4
Camp Hill,	17
Carlisle,	41
Cleversburg,	9
Enola,	15
Lisburn Heights,	3
Lemoyne,	1
Lower Mifflin Township,	3
New Cumberland,	23
Penbrook,	2
Perdix,	2
Riverton,	5
Shippensburg,	169
Shiremanstown,	1
Stony Point,	13
Summerdale,	3
Wormleysburg,	12

DAUPHIN COUNTY.

Dauphin,	49
Fort Hunter,	3
Halifax,	5
Harrisburg,	33
Heckton Mills,	4
Hershey,	62
Hummelstown,	14
Linglestown,	4
Lower Paxton Township,	1
Lucknow,	7
Middletown,	13
Millersburg,	6
Pleasant View,	12
Steelton,	7

DELAWARE COUNTY.

Boothwyn,	3
Chadds Ford,	15
Chester,	3
Concord Township,	1
Concordville,	12
Crum Creek,	4
Darby,	4
Folcroft,	4
Lansdowne,	1
Llanerch,	2
Morton,	10
Leiperville,	1
Newtown,	2
Plush Mills,	6
Radnor,	2
Ridley Park,	4
Secane,	1
Springfield Township,	3
Swarthmore,	6
Wayne,	8
Upper Chichester Township,	4

ELK COUNTY.

Johnsonburg,	10
Ridgway,	6
St. Marys,	18
Weedville,	3

ERIE COUNTY.

Corry,	4
Erie,	10
North East,	6
North Girard,	1
Union City,	17

FAYETTE COUNTY.

Brier Hill,	3
Brownfield,	12
Brownsville,	6
Continental,	1
Dunbar,	1
Everson,	25
Fairchance,	1
Fayette City,	60
Fostdale,	1
Georges Township,	1
Leckrone,	1
McClellantown,	2
Pennsville,	5
Smithfield,	6
Uledi,	4
Uniontown,	58
Youngstown,	1

FRANKLIN COUNTY.

Antrim Township,	17
Chambersburg,	15
Greencastle,	17
Greene Township,	4
Guilford Township,	4
Mont Alto,	187
Pleasant Hall,	6
Quincy,	3
St. Thomas Township,	4
Waynesboro,	10
Upper Strasburg,	3

GREENE COUNTY.

Aleppo Township,	4
Cumberland Township,	3
Dunkard,	6
Jefferson Township,	1
McConnellsburg,	5
McCracken,	1

HUNTINGDON COUNTY.

Grafton,	1
Huntingdon,	12
Kingwood Township,	3
Mt. Union,	39
Penn Township,	5
Petersburg,	3
Porter Township,	2
Saltillo,	15
Three Springs,	15
Walker Township,	6
Warriors Mark,	6

INDIANA COUNTY.

Center Township,	2
Cherry Tree,	3
Clymer,	2
Dixonville,	9
Indiana,	7
Saltsburg,	27
Tanoma,	1

JEFFERSON COUNTY.

Bell Township,	1
Brookville,	12
Knoxdale,	2
McAlmont Township,	1
Myerstown,	5
Pinecreek Township,	4
Punxsutawney,	6
Reynoldsville,	12
Rose Township,	3
Summerville,	2
Union Township,	2
Young Township,	3

JUNIATA COUNTY.

Pleasant View,	3

LACKAWANNA COUNTY.

Chinchilla,	4
Clarks Summit,	6
Dalton,	3
Dunmore,	1
Scranton,	15

LANCASTER COUNTY.

Bird-in-Hand,	5
Columbia,	4
East Earl Township,	1
Elizabethtown,	145
Holtwood,	5
Lancaster,	9
Leacock,	4
Lititz,	8
Maytown,	2
Millersville,	4
Rheems,	4
Salisbury Township,	5
Strasburg,	1
Talmage,	1
West Willow,	6

LAWRENCE COUNTY.

Ellwood City,	4
Princeton,	1
South New Castle,	5
Taylor Township,	4
Union Township,	1
Wampum,	3
West Pittsburgh,	4

LEBANON COUNTY.

Annville,	1
Cold Spring Township,	4
Cleona,	4
Derry Church,	1
Lebanon,	21
Mt. Gretna,	38
Myerstown,	1
Newmanstown,	5
Palmyra,	1
South Annville Township,	3
South Londonderry Township,	2

LEHIGH COUNTY.

Alburtis,	6
Allentown,	412
Catasauqua,	6
Coopersburg,	1
Hanover Township,	6

LUZERNE COUNTY.

Butler Township,	3
Fairmount Township,	3
Freeland,	43
Jeddo,	6
Pittston,	6
Shavertown,	6
Slocum Township,	10
Trucksville,	5
White Haven,	10
Wilkes-Barre,	7
Yatesville,	8

LYCOMING COUNTY.

Ralston,	3
Renovo,	6
Williamsport,	23

McKEAN COUNTY.

Bradford Township,	8
Hazlehurst,	5

MERCER COUNTY.

Farrell,	2
Greenville,	11
Grove City,	4
Jamestown,	6
Mercer,	6
Sandy Lake,	4
Sharon,	8
Stoneboro,	2

MIFFLIN COUNTY.

Brown Township,	3
Derry Township,	1
Lewistown,	34
Reedsville,	2
Union Township,	1
Lumber City,	3

MONROE COUNTY.

Middle Smithfield Township, ..	3
Tobyhanna, ...	2

MONTGOMERY COUNTY.

Abington Township, ...	8
Ambler, ...	6
Ardmore, ...	7
Bethayres, ...	2
Betzwood, ...	4
Bryn Athyn, ...	6
Bryn Mawr, ...	4
Center Point, ...	5
Cheltenham Township, ...	8
Moreland Township, ...	1
Collegeville, ...	13
Conshohocken, ...	1
Delphi, ...	2
Douglass Township, ...	1
Glenside, ...	9
Green Lane, ...	4
Eagleville, ...	2
East Greenville, ...	9
Elroy, ...	11
Franconia Township, ...	16
Frederick Township, ...	3
Hatboro, ...	8
Hatfield, ...	4
Horsham Township, ...	7
Huntingdon Valley, ...	1
Jenkintown, ...	14
Lansdale, ...	42
Leiperville, ...	1
Lower Merion Township, ...	5
Lower Providence Township, ..	2
Marlborough Township, ...	2
Merion Square, ...	1
Moreland Township, ...	5
North Coventry, ...	1
New Hanover Township, ...	2
Noble, ...	1
Norristown, ...	337
Northampton Township, ...	2
North Wales, ...	1
Ogontz, ...	2
Pennsburg, ...	4
Pickering Creek Station, ...	7
Pottstown, ...	6
Rosemont, ...	11
Royersford, ...	12
Schwenkville, ...	12
Springfield Township, ...	5
Skippack Township, ...	83
Souderton, ...	6
Sumneytown, ...	4
Stowe, ...	1
Telford, ...	6
Towamencin Township, ...	10
Upper Providence Township, ..	2
Valley Forge, ...	1
West Point, ...	7
Worcester Township, ...	62
Willow Grove, ...	33
Wyncote, ...	4
Upper Hanover Township, ...	4

MONTOUR COUNTY.

Danville, ...	591

NORTHAMPTON COUNTY.

Danielsville, ...	3
Delabole, ...	3
Delmatia, ...	6
Easton, ...	27
Hellertown, ...	10
Riverside, ...	5
South Bethlehem, ...	4

NORTHUMBERLAND COUNTY.

Herndon, ...	10
Northumberland, ...	6

PERRY COUNTY.

Bald Eagle Island, ...	5
Blain, ...	17
Loysville, ...	7
Newport, ...	15
Rush Township, ...	1

PHILADELPHIA COUNTY.

Overbrook, ...	2
Philadelphia, ...	78

POTTER COUNTY.

Austin, ...	135
Burtville, ...	6
Galeton, ...	1
Pike Township, ...	2
Whites Conners, ...	3

SCHUYLKILL COUNTY.

East Norwegian Township, ...	2
Frackville, ...	8
Gordon, ...	6
Hegins, ...	3
McAdoo, ...	4
New Manheim Township, ...	4
Nuremberg, ...	6
Pine Grove, ...	6
Port Carbon, ...	9
Port Clinton, ...	3
Schuylkill Haven, ...	9
Shenandoah, ...	18
Saint Clair, ...	4

SNYDER COUNTY.

Beavertown, ...	5
Middleburg, ...	5

SOMERSET COUNTY.

Addison Township, ...	2
Acosta, ...	11
Black Township, ...	2
Boswell, ...	6
Casselman, ...	6
Confluence, ...	6
Garrett, ...	4
Hooversville, ...	6
Milford Township, ...	4
Richland Township, ...	1
Lower Turkeyfoot Township, ..	2
Windber, ...	7

SUSQUEHANNA COUNTY.

Lynn, ...	5
Montrose, ...	5
Springfield Township, ...	3

TIOGA COUNTY.

Arnot, ...	5
Blossburg, ...	5
Jackson Summit, ...	3
Mansfield, ...	2
Nelson, ...	6
Wellsboro, ...	6

UNION COUNTY.

Limestone, ...	4

VENANGO COUNTY.

Emlenton, ...	6
Pleasantville, ...	15
Polk, ...	156

WARREN COUNTY.	
Clarendon,	3
Warren,	225
Youngsville,	9
WASHINGTON COUNTY.	
Amwell Township,	3
Burgettstown,	4
California,	7
Canonsburg,	23
Centerville,	11
Charleroi,	3
East Washington,	3
Hills,	6
Marianna,	31
Millsboro,	1
Monongahela City,	22
Nottingham Township,	1
Peters Township,	1
Point View,	12
Taylorstown,	1
Vesta Heights,	3
Vinton Township,	1
Washington,	30
WAYNE COUNTY.	
Fairview,	11
Hawley,	6
Honesdale,	6
WESTMORELAND COUNTY.	
Armbrust,	3
Arnold,	13
East Huntingdon Township,	5
Fairfield Township,	10
Greensburg,	39
Huff Station,	2
Irwin,	10
Jacobs Creek,	6
Jeannette,	27
Latrobe,	3
Monessen,	44
Mount Pleasant,	9
New Kensington,	32
Parnassus,	6
Rostraver Township,	1
Ruffsdale,	1
Scottdale,	25
Trauger,	5
Washington Township,	1
WYOMING COUNTY.	
Tunkhannock,	4
Windham Township,	1
YORK COUNTY.	
Cly,	6
Dallastown,	11
Delta,	3
Dillsburg,	10
Dover Township,	20
Fawn Grove,	3
Goldsboro,	3
Hanover,	3
Hallam,	9
Mt. Wolf,	2
Nashville,	4
North York,	1
Peach Bottom,	6
Rossville,	1
Spring Grove,	6
Thomasville,	3
Warrington,	4
Washington Township,	1
Wellsville,	4
Wrightsville,	1
Windsor,	6
Yoe,	5
York,	39
York Haven,	8

Milk:—Only seventy-seven samples were sent in for examination during the year. The source of these samples appears in the following:

MILK LIST.

BERKS COUNTY.	
Hamburg,	13
CAMBRIA COUNTY.	
Cresson,	20
CLINTON COUNTY.	
Renovo,	1
CUMBERLAND COUNTY.	
Camp Hill,	1
Shippensburg,	2
DAUPHIN COUNTY.	
Harrisburg,	2
ELK COUNTY.	
St. Marys,	4
LUZERNE COUNTY.	
Slocum Township,	3
Yatesville,	2
MONTGOMERY COUNTY.	
Lansdale,	5
Moreland Township,	2
Willow Grove,	15
PERRY COUNTY.	
Newport,	2
SNYDER COUNTY.	
Middleburg,	1
SCHUYLKILL COUNTY.	
Pine Grove,	1
WASHINGTON COUNTY.	
East Bethlehem Township,	2
YORK COUNTY.	
York,	1

Malaria:—Sixty-eight specimens of blood were examined for malaria parasites. Two of these specimens showed their presence, and were both taken from male patients. The negatives were divided among males and females in the proportion of thirty-five to thirty-one.

Widal Reaction:—Specimens to the number of 1,810 were received. Of these, 674 gave a positive reaction to B. Typhosus while 1,040 resulted negatively. Forty-two specimens were received in a condition unfit for examination. Of the positives, 378 were from males and 296 from females. The agglutination reaction with other bacteria of the typhoid-dysentery group was made in fifty-four instances as follows: Thirty-five specimens were negative to B. Typhosus, B. Paratyphosus A and B, B. Paracoli, B. Enteritidis (Gaertner), and B. Dysenteriae; thirteen were positive to B. Paratyphosus B alone, one was positive to B. Paratyphosus A and B. Typhosus, one was positive to B. Paracoli alone, two were positive to B. Paracoli and B. Typhosus, one was positive to B. Paracoli, B. Typhosus, and B. Enteritidis, and one was positive to B. Enteritidis and B. Typhosus.

Sputum for Tubercle Bacilli:—We received 8,878 specimens. Of these, 1,883 showed the presence of the tubercle bacillus, while its presence was not revealed in 6,941 specimens. Fifty-four were received in a condition unfit for examination.

The percentage of positives to the whole number examined was 21.3. This is a smaller percentage than we have ever had, but for the past several years the percentage of positives has been gradually decreasing, due, we think, in all probability, to the more general use of the laboratory by the practicing physician in sending in sputum from any and all suspicious cases with profuse expectoration extending over a suspiciously long time, even though the patients may present no other clinical signs of tuberculosis. Of the 1,883 specimens in which B. Tuberculosis was present, 1,179 came from males and 704 from females.

Urine:—During 1915, urine specimens were received to the number of 596. Of these, 360 were given the routine chemical examination for detecting the presence of albumin, sugar, etc., for the three Philadelphia Dispensaries for Tuberculosis conducted by the Pennsylvania Department of Health. Tubercle bacilli were present in fifty-eight, and were not found in seventy-nine.

B. Typhosus was isolated in one specimen from the State Hospital for the Insane at Danville.

In sixty-seven specimens bacteria of the typhoid-colon-dysentery group were not found.

Gonococci were sought for in three specimens but were not found.

General bacteriological examination was made in the case of twelve specimens.

There were eight specimens for which a Diazo reaction was requested. One of these responded positively to the test. Seven specimens received were unfit for examination.

Pathological Fluids:—There were 250 of these specimens of transudates and exudates received. Two were unfit for examination.

Examination of the 248 suitable specimens resulted as follows: Tubercle bacilli present in fifty-two specimens, not found in sixty-five specimens; gonococci present in thirteen specimens, not found in sixty-eight specimens.

A general bacteriological examination was made of fifty specimens. Among these fifty specimens were eleven which were examined without success for the presence of the Treponema pallidum. Also counted among these fifty specimens examined were four for the presence of the Oppler-Boas bacillus and three for Actinomyces bovis. In none of these seven specimens were the organisms sought for found.

Pathological Tissues and Morbid Growths:—Altogether 485 specimens of tissue were received. Two of these were unfit for examination, leaving 483 to be examined and reported upon. Of these, 136 were from males and 327 from females. The specimens consisted in the majority of cases of tumors or new growths.

Among the specimens were seven which are apprehended rather infrequently and were of more than oridnary interest to us: A section of the omentum showing a hypernephroma; two specimens illustrating beautifully a melanoma or melanotic sarcoma; two showing a mixed tumor of the parotid gland, a rather rare condition; one specimen of chorio-epithelioma; and one diagnosed as tuberculosis or cancer by the attending physician, which showed a simple fatty necrosis of the omentum, non-malignant.

Feces:—Specimens to the number of 179 were received. Two of them were unfit for examination. Sixty-five were examined for the presence of tubercle bacilli, among which the micro-organism was observed in nineteen. Among the forty-six specimens in which tubercle bacilli were not found were seven examined for tubercle bacilli and streptococci, two for tubercle bacilli and amoebae dysenteriae, and four for tubercle bacilli of the dysentery group.

Eighty-three specimens were examined for the presence of micro-organisms of the typhoid-colon-dysentery group. From five of these B. Typhosus was isolated, while bacilli of this group were not found in seventy-eight specimens.

Intestinal parasites or their ova were sought for in twenty-five specimens. In three of these taenia saginata was found in three instances, while in twenty-two no parasites were observed.

Miscellaneous:—A total of 508 specimens were examined. In 456 of these was determined the presence or absence of Bact. diphtheriae. Of these, 222 were reported as positive and 234 negative.

Twenty-one samples of oysters and oyster juice were examined for the presence of the typhoid-colon-dysentery group. In six samples B. Coli only was isolated, while in the remaining fifteen no members of this group were found.

Tubercle bacilli were sought for in seven specimens, but in none of these were the organisms found.

In two samples of butter and one of milk, no pathogenic organisms were found.

There were four samples of ice cream for which a general bacteriological examination was made. In one of these there were found large numbers of B. Coli, but no other pathogens. The remaining three samples contained no pathogenic micro-organisms.

There were three specimens of celery on two of which no intestinal bacteria were found, but from the third B. Coli and B. Typhosus were isolated.

One sample of green peppers showed large numbers of B. Coli but no typhoid nor dysentery organisms.

A sample of head lettuce also contained B. Coli.

No bacteria of the intestinal group were found on one sample of fennel and one of dandelion greens examined.

Ten miscellaneous specimens were examined for trichina, taenia saginata, tinea sycosis, streptococci, staphylococci, B. Tetani, etc.

Wassermann Reaction:—These are given in full detail in the following table.

WASSERMANN TESTS—1915.

Nature of Specimen.	No. of specimens from this patient.	Sex.	Color.	Age.	Native or Foreign.	Conjugal Condition.	Occupation.	Pos. or Negative.
B'ood,	1	Male,	White,	45	Native,	Married,	Plumber,	Neg.
Plood,	1	Female,	White,	18	Native,	Married,	Housewife,	Neg.
B'ood,	1	Male,						Pos.
B'ood,	1	Male,	White,			Married,	Plumber,	Neg.
Blood,	1							Pos.
B'ood,	1	Male,	White,	49	Native,	Married,	Machinist,	Neg.
Blood,	2nd	Male,	White,	49	Native,	Married,	Machinist,	Neg.
B'ood,	1	Male,	White,	32		Married,	Meter reader,	Neg.
Blood,	1							Pos.
B'ood,	1	Male,	White,	51		Married,		Neg.
B'ood,	1	Male,	White,	30	Native,	Single,	Merchant,	Neg.
B'ood,	1	Male,	White,	28	Foreign,	Single,	Laborer,	Neg.
B'ood,	1	Male,	White,	40	Native,	Single,	Watchman,	Neg.
Blood,	1	Female,	White,	27	Native,	Single,	Waitress,	Neg.
B'ood,	1	Male,	White,	25	Native,	Single,	Telegrapher,	Pos.
Blood,	2nd	Male,	White,	25	Native,	Single,	Telegrapher,	Pos.
B'ood,	1	Male,	White,	33	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Female,	White,	21	Native,	Single,		Pos.
B'ood,	1	Male,	White,	45	Native,	Married,	Stone mason,	Neg.
Blood,	2nd	Male,	White,	45	Native,	Married,	Stone mason,	Pos.
Plood,	1	Male,	White,	30	Native,	Single,	Hospital orderly,	Neg.
Blood,	1	Male,	White,	24	Native,	Single,	Teacher,	Neg.
Blood,	1	Male,	White,	35	Native,	Married,		Pos.
Blood,	1	Male,	White,	36	Native,	Married,	Janitor,	Neg.
Blood,	1	Male,	White,	32	Native,	Single,	Acrobat,	Neg.
Blood,	1	Male,	White,	26	Native,	Married,	Cooper,	Neg.
Plood,	1	Female,	White,	25	Native,	Married,	Housewife,	Neg.
B'ood,	1	Female,	White,	20	Native,	Single,	Waitress,	Pos.
P'ood,	1	Male,	White,	24	Native,	Single,	Machinist,	Pos.
B'ood,	2rd	Male,	White,	24	Native,	Married,	Iron worker,	Neg.
B'ood,	1	Male,	White,	25	Native,	Single,		Pos.

Blood,	1	Male,	White,	53		Single,	Station agent,	Pos.
Blood,	1	Male,	White,	42	Native,	Single,		Neg.
Blood,	1	Male,	White,	26	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	36	Native,	Married,	Machinist,	Neg.
Blood,	1	Male,	White,	29	Native,	Single,		Pos.
Blood,	2nd	Male,	White,	30	Native,	Single,		Pos.
Blood,	1	Male,	White,	29	Native,	Married,	Station agent,	Neg.
Blood,	1	Male,	White,	26	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	30	Native,	Single,	Orderly in hospital,	Neg.
Blood,	1	Male,	White,	45	Foreign,	Married,	Laborer,	Pos.
Blood,	1	Male,	White,	28	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	36	Native,	Divorced,	Salesman,	Pos.
Blood,	1	Male,	White,	42	Foreign,	Married,	Steel worker,	Neg.
Blood,	1	Male,	White,	22	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	28	Native,	Single,	Steel worker,	Pos.
Blood,	1	Male,	White,	30	Foreign,	Single,	Coal miner,	Neg.
Blood,	1	Male,	White,	32	Native,	Single,	Steel worker,	Neg.
Blood,	2nd	Male,	White,	25	Native,	Single,	Carenpter,	Neg.
Blood,	1	Male,	White,	25	Foreign,	Single,	Steel worker,	Neg.
Blood,	1	Female,	White,	41	Native,	Married,	Housewife,	Neg.
Blood,	1	Female,	Black,	46	Native,	Divorced,		Neg.
Blood,	1	Female,	White,	48	Native,	Divorced,	Housewife,	Neg.
Blood,	1	Male,	White,	54	Foreign,	Married,	Mill worker,	Neg.
Blood,	1	Male,	White,	25	Native,	Married,	Motorman,	Neg.
Blood,	1	Male,	White,	37	Native,	Married,	Motorman,	Neg.
Blood,	1	Male,	White,	49	Native,	Divorced,	None,	Pos.
Blood,	1	Male,	White,	28	Native,	Married,	Cotton weaver,	Neg.
Blood,	1	Female,	White,	30	Foreign,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	28	Foreign,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	34	Foreign,	Married,	Miner,	Pos.
Blood,	3rd	Male,	White,	34	Foreign,	Married,	Miner,	Neg.
Blood,	1	Male,	White,	32	Foreign,	Single,	Miner,	Neg.
Blood,	1	Male,	White,		Foreign,	Single,	Laborer,	Pos.
Blood,	2nd	Male,	White,	34	Foreign,	Married,	Miner,	Pos.
Blood,	1	Female,	White,	28	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	28	Native,	Single,	Farmer,	Neg.
Blood,	1	Male,	Black,	22	Native,	Married,	Steel worker,	Pos.
Blood,	1	Female,	White,	25	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	22	Foreign,	Single,	Laborer,	Neg.
Blood,	1	Female,	White,	42	Native,	Married,	Housework,	Neg.
Blood,	1	Female,	White,	38	Native,	Married,	Housework,	Pos.
Blood,	1	Male,	White,	39	Foreign,	Married,	Laborer,	Pos.
Blood,	2nd	Male,	White,	39	Foreign,	Married,	Laborer,	Pos.
Blood,	1	Male,	White,	41	Native,	Single,	Salesman,	Neg.
Blood,	1	Male,	White,	31	Foreign,	Married,	Barber,	Neg.
Blood,	2nd	Male,	White,	31	Foreign,	Single,	Laborer,	Pos.
Blood,	2nd	Male,	White,	29	Foreign,	Single,	Laborer,	Neg.
Blood,	1	Female,	White,	36	Foreign,	Married,		Neg.
Blood,	1	Male,	White,	46	Native,	Widower,		Neg.
Blood,	2nd	Female,	White,	24	Native,	Single,	Factory,	Neg.

WASSERMANN TESTS—Continued.

Nature of Specimen.	No. of specimens from this patient.	Sex.	Color.	Age.	Native or Foreign.	Conjugal Condition.	Occupation.	Pos. or Negative.
Blood,	1	Male,	White,	29	Foreign,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	29	Foreign,	Single,	Laborer,	Pos.
Blood,	2nd	Female,	White,	37	Native,	Married,	Housework,	Neg.
Blood,	2nd	Female,	White,	24	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	42	Native,	Married,	Motorman,	Neg.
Blood,	1	Female,	White,	37		Married,	Dressmaker,	Pos.
Blood,	1	Male,	White,	30	Foreign,	Single,		Neg.
Blood,	1	Female,	White,	35	Native,	Divorced,	Factory girl,	Pos.
Blood,	2nd	Female,	White,	32	Native,	Married,	Textile worker,	Pos.
Blood,	1	Female,	White,	42	Native,	Married,	Housework,	Neg.
Blood,	1	Female,	White,	45	Native,	Married,	Housework,	Pos.
Blood,	1	Male,	White,	31	Foreign,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,	30	Foreign,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,	29	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,		Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	31	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	30	Foreign,	Married,	Agent,	Pos.
Blood,	2nd	Male,	White,	35	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	24	Native,	Single,		Neg.
Blood,	1	Male,	White,	35	Native,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,	45	Native,	Married,	Potter,	Pos.
Blood,	1	Male,	White,	36	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	25	Native,	Single,	Laborer,	Pos.
Blood,	2nd	Male,	White,	45	Native,	Married,	Potter,	Pos.
Blood,	1	Female,	White,	31	Native,	Married,	Housework,	Neg.
Blood,	1	Female,	White,	29	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	44	Native,	Married,	Hotelman,	Pos.
Blood,	1	Female,	White,	25	Native,	Married,	Housewife,	Neg.
Blood,	1	Male,	White,					Pos.
Blood,	1	Female,	White,		Native,	Married,		Neg.
Blood,	1	Female,	White,	41	Native,	Widow,	Housewife,	Pos.

Blood,	1	Male,	White,	20	Foreign,	Single,	Laborer,	Neg.
Blood,	1	Female,	White,		Native,	Single,		Pos.
Blood,	1	Male,	White,	24	Native,	Married,	Clerk,	Neg.
Blood,	1	Female,	White,	24	Native,	Married,	Housework,	Pos.
Blood,	1							Neg.
Blood,	1	Male,	White,	23	Native,	Married,	Machinist,	Pos.
Blood,	1	Male,	White,	51	Native,	Married,	Lettercarrier,	Pos.
Blood,	1	Male,	White,	36	Native,	Married,	Clerk,	Pos.
Blood,	1	Female,	White,	40	Native,	Divorced,	Housework,	Pos.
Blood,	1	Female,	Black,	35	Native,	Married,	Housework,	Pos.
Blood,	1	Male,	White,	56	Native,	Widow,	Laborer,	Pos.
Blood,	1	Male,	White,	30	Native,	Single,	Crane mover,	Neg.
Blood,	2nd	Male,	White,	30	Native,	Single,	Laborer,	Pos.
Blood,	1	Female,	White,	53	Native,	Married,	Housework,	Neg.
Blood,	1	Female,	White,	55	Native,	Widow,	Housework,	Neg.
Blood,	1	Male,	White,	21	Native,	Single,	Zinc worker,	Neg.
Blood,	2nd	Male,	White,	25	Native,	Single,	Foreman,	Neg.
Blood,	1	Male,	White,	25	Native,	Single,	Foreman,	Neg.
Blood,	1	Male,		29	Native,	Married,	Laborer,	Pos.
Blood,	1	Male,	White,	33	Native,	Single,	Salesman,	Neg.
Blood,	1	Female,	White,	47	Native,	Married,	Housework,	Neg.
Blood,	1	Female,	White,	23	Native,	Single,	Clerk,	Neg.
Blood,	1	Female,	White,	23	Native,	Married,	Housework,	Pos.
Blood,	1	Male,	White,	38	Native,	Single,	Farmer,	Neg.
Blood,	1	Female,	White,	21	Native,	Single,		Pos.
Blood,	1	Male,	White,	24	Native,	Single,	Farmer,	Pos.
Blood,	1	Male,	White,	30	Native,	Married,	Machinist,	Pos.
Blood,	1	Male,	White,	19	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	25	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	48	Foreign,	Married,	Miner,	Neg.
Blood,	1	Female,	White,	23	Foreign,	Married,		Neg.
Blood,	1	Male,	White,	32	Native,	Single,	Merchant,	Pos.
Blood,	2nd	Male,	White,	32	Native,	Single,	Merchant,	Pos.
Blood,	1	Male,	White,	27	Native,	Single,	Driver,	Neg.
Blood,	1	Male,	White,	40	Native,	Married,	Clerk,	Neg.
Blood,	1	Male,	White,	25	Native,	Single,	Miner,	Neg.
Blood,	1	Male,	White,	30	Native,	Married,	Merchant,	Pos.
Blood,	2nd	Male,	White,	30	Native,	Married,	Merchant,	Pos.
Blood,	1	Male,	White,	39	Native,	Single,	Miner,	Neg.
Blood,	1	Male,	White,	28	Native,	Married,	Laborer,	Neg.
Blood,	1	Female,	White,	40	Native,	Married,	Housework,	Pos.
Blood,	--	Male,	Black,	32	Foreign,	Married,	Chauffeur,	Neg
Blood,	1	Male,	White,	19	Native,	Single,	Miner,	Pos.
Blood,	1	Male,	White,	23	Native,	Single,		Neg.
Blood,	1	Female,						Pos.
Blood,	1	Male,	White,	24	Native,	Single,	Brakeman,	Pos.
Blood,	1	Male,	White,	58	Native,	Married,		Neg.
Blood,	1	Female,	White,	21	Native,	Single,	Housework,	Pos.
Blood,	1	Female,	White,	23	Native,	Single,		Neg.
Blood,	1	Male,	White,	35	Foreign,	Married,		Neg.

WASSERMANN TESTS—Continued.

Nature of Specimen.	No. of specimens from this patient.	Sex.	Color.	Age.	Native or Foreign.	Conjugal Condition.	Occupation.	Pos. or Negative.
Blood,	1	Male,	White,	36	Native,	Married,	Miner,	Neg.
Blood,	1	Male,	White,	29	Foreign,	Married,	Miner,	Neg.
Blood,	1	Female,	White,	37	Native,	Married,	Housework,	Neg.
Blood,	1	Male,						Neg.
Blood,	1	Female,	White,	24	Native,	Single,	Clerk,	Neg.
Blood,	1	Male,	White,	44	Foreign,	Single,	Miner,	Neg.
Blood,	1	Male,	White,	24	Native,	Single,	Storekeeper,	Pos.
Blood,	1	Male,	White,	29	Native,	Widower,	Laborer,	Neg.
Blood,	1	Male,	White,	47	Native,	Married,	Engineer,	Neg.
Blood,	3rd	Male,	White,	36	Foreign,	Married,		Neg.
Blood,	5th	Male,	White,	40	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,						Neg.
Blood,	1	Male,	White,	45	Native,	Married,	Miner,	Neg.
Blood,	1	Male,	White,	35	Native,	Single,	Teamster,	Pos.
Blood,	1	Female,	White,	18	Native,	Single,		Neg.
Blood,	1	Female,	White,	29	Foreign,	Married,	Housework,	Pos.
Blood,	1	Male,	White,	35	Foreign,	Married,	Laborer,	Pos.
Blood,	2nd	Female,	White,	40	Foreign,	Married,		Pos.
Blood,	3rd	Male,	White,	36	Foreign,	Married,		Pos.
Blood,	3rd	Female,	White,	40	Foreign,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	60	Native,	Married,	Engineer,	Neg.
Blood,	3rd	Female,	White,	29	Native,	Married,		Pos.
Blood,	1	Female,	White,	29	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	27	Foreign,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,	26	Foreign,	Single,	Laborer,	Neg.
Blood,	1	Female,	White,	50	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	27	Native,	Single,	Merchant,	Neg.
Blood,	1	Male,	White,	25	Foreign,	Married,	Civil engineer,	Neg.
Blood,	1	Male,	White,	24	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	24	Native,	Single,	Mechanic,	Pos.
Blood,	1	Male,	White,	25	Foreign,	Single,	Laborer,	Neg.
Blood,	1	Female,	White,	32	Native,	Widow,	Stenographer,	Pos.

Blood,	2nd	Female,	White,	32	Native,	Widow,	Stenographer,	Neg.
Blood,	3rd	Female,	White,	52	Native,	Widow,	Stenographer,	Pos.
Blood,	1	Male,	White,	24	Foreign,	Single,	Salesman,	Neg.
Blood,	2nd	Male,	White,	23	Native,	Single,	Steel worker,	Neg.
Blood,	1	Male,	White,	21	Foreign,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	57	Native,	Married,		Neg.
Blood,	1	Female,	White,	35	Native,	Married,	Housewife,	Neg.
Blood,	1	Female,	White,	27	Foreign,	Married,	Housewife,	Neg.
Blood,	1	Male,						Neg.
Blood,	—	Male,	White,	33	Native,	Married,	Farmer,	Neg.
Blood,	1	Male,	White,	42	Native,	Widower,	Laborer,	Neg.
Blood,	1	Female,	White,	43	Native,	Married,		Neg.
Blood,	1	Female,	White,	49	Native,	Married,	Housework,	Pos.
Blood,	1	Male,	White,	24	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	26	Foreign,	Married,	Miner,	Neg.
Blood,	1	Female,	White,	31	Native,	Single,	Factory worker,	Neg.
Blood,	1	Female,	White,	52	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	24	Native,	Single,	Brakeman,	Pos.
Blood,	1	Male,	White,	21	Native,	Single,	Laborer,	Neg.
Blood,	1	Female,	White,	27	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	64	Native,	Married,	Miner,	Neg.
Blood,	1	Female,	White,	52	Foreign,	Married,	Housework,	Neg.
Blood,	1	Female,	White,	43	Native,	Single,	Seamstress,	Neg.
Blood,	1	Male,	White,	21	Foreign,	Married,	Miner,	Neg.
Blood,	1	Male,	White,	44	Foreign,	Married,	Miner,	Neg.
Blood,	1	Male,	White,	28	Foreign,	Single,	Salesman,	Neg.
Blood,	1	Male,	White,	28	Native,	Married,	Laborer,	Neg.
Blood,	1	Female,	White,	60	Foreign,	Widow,	Housework,	Neg.
Blood,	1	Male,	White,	49	Foreign,	Married,	Miner,	Neg.
Blood,	1	Male,	White,	47	Native,	Married,	Janitor,	Neg.
Blood,	1	Female,	White,	43	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	34	Native,	Married,	Salesman,	Neg.
Blood,	1	Male,	White,	43	Native,	Married,	Salesman,	Neg.
Blood,	1	Male,	White,	54	Native,	Married,	Salesman,	Pos.
Blood,	1	Female,	White,	47	Native,	Married,	Housewife,	Neg.
Blood,	1	Female,	White,	44	Native,	Single,	Seamstress,	Neg.
Blood,	1	Male,	White,	25	Native,	Married,	Miner,	Neg.
Blood,	1	Male,	White,	45	Foreign,	Married,	Chauffeur,	Neg.
Blood,	1	Female,	White,	40	Foreign,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	30	Native,	Married,	Painter,	Pos.
Blood,	1	Male,	White,	47	Native,	Married,	Bartender,	Neg.
Blood,	1	Female,	White,	32	Foreign,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	33	Native,	Married,	Salesman,	Pos.
Blood,	1	Female,	White,	29	Foreign,	Married,	Housework,	Neg.
Blood,	1	Female,	White,	21	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	30	Foreign,	Single,	Miner,	Neg.
Blood,	1	Male,	White,	25	Foreign,	Single,	Carpenter,	Neg.
Blood,	1	Female,	White,	50	Foreign,	Married,	Housework,	Neg.
Blood,	1	Female,	White,	21	Native,	Single,	Housework,	Neg.
Blood,	1	Male,	White,	49	Foreign,	Married,	Miner,	Neg.

WASSERMANN TESTS—Continued.

Nature of Specimen.	No. of specimens from this patient.	Sex.	Color.	Age.	Native or Foreign.	Conjugal Condition.	Occupation.	Pos. or Negative.
Blood,	1	Male,	White,	47	Foreign,	Married,	Miner,	Neg.
Blood,	1	Male,	White,	54	Foreign,	Married,	Miner,	Neg.
Blood,	1	Male,	White,	21	Foreign,	Married,		Neg.
Blood,	1	Male,	White,	47	Native,	Married,	Contractor,	Pos.
Blood,	1	Male,	White,	19	Native,	Single,	Cleaner,	Pos.
Blood,	1	Male,	White,	25	Native,	Single,	Clerk,	Neg.
Blood,	1	Female,	White,	18	Native,	Single,		Neg.
Blood,	1	Male,	White,	21	Native,	Single,	Brakeman,	Neg.
Blood,	1	Male,	White,		Foreign,	Single,		Neg.
Blood,	1	Female,	White,	42	Native,	Married,		Neg.
Blood,	2nd	Female,	White,	12	Native,	Single,	School girl,	Pos.
Blood,	1	Male,	White,	25	Native,	Single,	Laborer,	Neg.
Blood,	1	Female,	White,	9	Native,	Single,		Pos.
Blood,	1	Male,	White,	32	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	21	Native,	Single,	Clerk,	Pos.
Blood,	2nd	Male,	White,	21	Native,	Single,	Clerk,	Neg.
Blood,	1	Male,	White,	24	Native,	Single,	Clerk,	Neg.
Blood,	1	Female,	White,	40	Native,	Married,	Housework,	Neg.
Blood,	1	Female,	White,	21	Native,	Single,	Clerk,	Neg.
Blood,	1	Female,	White,	28	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	23	Native,	Married,	Clerk,	Neg.
Blood,	1	Male,	White,	29	Native,	Single,	Bookkeeper,	Pos.
Blood,	1	Male,	White,	51	Foreign,	Married,	Salesman,	Neg.
Blood,	1	Female,	White,	24	Native,	Single,	Maid,	Pos.
Blood,	1	Male,	White,	34	Native,	Single,		Pos.
Blood,	1	Male,	White,	28	Native,	Single,	Bookkeeper,	Pos.
Blood,	1	Female,	White,	51	Native,	Married,		Neg.
Blood,	1	Female,	White,	34	Native,	Married,	Housekeeper,	Neg.
Blood,	1	Male,	White,	42	Native,	Married,	Merchant,	Neg.
Blood,	1	Male,	White,	25	Native,	Married,	Clerk,	Neg.
Blood,	1	Male,	White,	42	Native,	Married,	Policeman,	Neg.

Blood,	1	Male,	White,	23	Native,	Single,	Clerk,	Neg.
Blood,	1	Male,	Black,	28	Native,	Married,	Clerk,	Neg.
Blood,	1	Female,	White,	45	Foreign,	Single,	Maid,	Neg.
Blood,	1	Female,	White,	34	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	31	Native,	Single,	Machinist,	Neg.
Blood,	1	Male,	White,	32	Foreign,	Married,	Clerk,	Neg.
Blood,	1	Male,	White,	42	Native,	Single,	Miner,	Neg.
Blood,	1	Male,	White,	32	Native,	Married,	Agent,	Neg.
Blood,	1	Male,	White,	19	Native,	Single,	Housework,	Neg.
Blood,	1	Female,	White,	51	Foreign,	Married,	Housework,	Neg.
Blood,	1	Female,	White,	28	Native,	Married,	Laborer,	Pos.
Blood,	1	Male,	White,	45	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	50	Native,	Married,	Housewife,	Neg.
Blood,	1	Female,	White,	42	Native,	Married,	Housework,	Neg.
Blood,	1	Female,	White,	54	Foreign,	Married,	Miner,	Neg.
Blood,	1	Male,	White,		Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	22	Native,	Married,	Laborer,	Pos.
Blood,	1	Male,	White,	22	Native,	Married,	Clerk,	Neg.
Blood,	1	Male,	White,	42	Native,	Married,	Laborer,	Pos.
Blood,	1	Male,	White,	38	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	43	Native,			Neg.
Blood,	1	Male,				Single,	Mill hand,	Neg.
Blood,	1	Female,	White,	19	Native,	Married,	Housewife,	Pos.
Blood,	1	Female,	White,	28	Foreign,	Single,		Neg.
Blood,	1	Female,	White,	18	Native,	Single,	Bookkeeper,	Neg.
Blood,	1	Female,	White,	22	Native,	Widow,	Housework,	Neg.
Blood,	1	Female,	White,	28	Foreign,	Married,	Laborer,	Pos.
Blood,	1	Male,	White,	48	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	40	Foreign,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	26	Native,	Married,	Housework,	Neg.
Blood,	1	Female,	White,	27	Foreign,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	22	Native,	Single,	School,	Neg.
Blood,	1	Male,	White,	9	Native,	Married,	Carpenter,	Neg.
Blood,	1	Male,	White,	51	Foreign,	Married,		Pos.
Blood,	1	Male,	White,	47	Foreign,	Married,	Housework,	Neg.
Blood,	1	Female,	White,	33	Foreign,	Single,	Clerk,	Neg.
Blood,	1	Male,	White,	19	Native,	Married,	Clerk,	Neg.
Blood,	1	Female,	White,	40	Native,			Neg.
Blood,	1	Male,	White,	23	Native,	Single,	Laborer,	Neg.
Blood,	1	Female,	White,	42	Native,	Single,	Housework,	Neg.
Blood,	2nd	Female,	White,	42	Native,	Single,	Housework,	Neg.
Blood,	1	Male,	White,	50	Native,	Married,	Clerk,	Neg.
Blood,	1	Male,	White,			Married,	Housework,	Neg.
Blood,	1	Male,	White,		Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	26	Native,	Single,	Baker,	Pos.
Blood,	1	Male,	White,	25	Foreign,	Married,	Miner,	Neg.
Blood,	1	Male,	White,	38	Native,	Married,	Merchant,	Pos.
Blood,	1	Male,	White,	39	Native,	Married,		Neg.
Blood,	1	Male,	White,	50	Native,	Married,		Neg.

WASSERMANN TESTS—Continued.

Nature of Specimen.	No. of specimen from this patient.	Sex.	Color.	Age.	Native or Foreign.	Conjugal Condition.	Occupation.	Pos. or Negative.
Blood,	1	Male,	White,	50	Native,	Widower,		Neg.
Blood,	1	Male,	White,		Native,	Married,	Agent,	Pos.
Blood,	1	Male,	White,	25	Native,	Single,	Clerk,	Neg.
Blood,	1	Female,	White,	27	Native,	Married,		Pos.
Blood,	1	Female,	White,	44	Foreign,	Widow,	Housewife,	Neg.
Blood,	1	Female,	White,	49	Native,	Single,	Seamstress,	Neg.
Blood,	1	Male,	White,	27	Foreign,	Single,		Neg.
Blood,	1	Male,	White,	21		Single,		Neg.
Blood,	1	Male,	White,	49	Native,	Married,	Barber,	Pos.
Blood,	1	Male,	White,	32	Native,	Married,	Blacksmith,	Neg.
Blood,	1	Male,	White,	26	Foreign,	Single,	Laborer,	Neg.
Blood,	1	Female,	White,		Foreign,	Single,		Neg.
Blood,	1	Male,	White,	56	Foreign,	Married,		Neg.
Blood,	1	Male,	White,	26	Foreign,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	24	Native,	Single,	Musician,	Pos.
Blood,	1	Male,	White,	25	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	34	Foreign,	Single,		Neg.
Blood,	1	Female,	White,	21		Single,	Maid,	Pos.
Blood,	1	Male,	White,	23	Native,	Single,	Glass worker,	Neg.
Blood,	1	Female,	White,	28	Native,	Married,	Housewife,	Neg.
Blood,	1	Male,	White,	24	Native,	Single,		Neg.
Blood,	1	Male,	White,		Native,	Single,	R. R. clerk,	Neg.
Blood,	1	Male,	White,	37	Native,	Married,	Butcher,	Neg.
Blood,	1	Female,	White,	37	Native,	Married,	Housewife,	Neg.
Blood,	1	Female,	White,	25	Native,	Single,		Pos.
Blood,	1	Male,	White,	22	Foreign,	Married,	Housework,	Pos.
Blood,	2d	Male,	White,	44	Native,			Neg.
Blood,	1	Male,	White,	35	Native,	Married,	Farmer,	Pos.
Blood,	1	Male,	White,	21	Native,	Single,		Pos.
Blood,	1	Male,	White,	42	Native,	Divorced,		Neg.
Blood,	1	Male,	White,	35	Native,	Married,	Clerk,	Pos.

Blood,	1	Female,	White,	21	Native,	Single,	Housework,	Neg.
Blood,	1	Female,	White,	45	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	25	Native,	Single,	Miner,	Neg.
Blood,	1	Male,	White,	30	Native,	Married,	Miner,	Pos.
Blood,	1	Male,	White,	32	Native,	Married,		Neg.
Blood,	1	Male,	White,	24	Native,	Married,	Laborer,	Neg.
Blood,	1	Female,	White,	50	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	23	Native,	Single,	Motorman,	Pos.
Blood,	2nd	Male,	White,	22	Native,	Single,	Clerk,	Pos.
Blood,	3rd	Male,	White,	32	Native,	Single,		Pos.
Blood,	3rd	Male,	White,	35	Native,	Single,	Clerk,	Neg.
Blood,	1	Female,	White,	45	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	25	Native,	Single,	Clerk,	Neg.
Blood,	1	Male,	Black,	50	Native,	Married,	Laborer,	Pos.
Blood,	1	Male,	Black,	60	Native,	Married,		Neg.
Blood,	1	Male,	White,	45	Native,	Single,	Salesman,	Neg.
Blood,	1	Male,	White,	50	Native,	Married,	Machinist,	Neg.
Blood,	1	Male,	White,	22	Native,	Single,	Silk mill,	Pos.
Blood,	1	Female,	White,	15	Native,	Single,	School girl,	Neg.
Blood,	1							Neg.
Blood,	1	Male,	White,	50	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	21	Foreign,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	52	Native,	Single,	Glass worker,	Neg.
Blood,	1	Male,	White,	42	Native,	Widower,	Teamster,	Neg.
Blood,	1	Male,	White,	34	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	20	Native,	Married,	Miner,	Neg.
Blood,	1	Female,	White,	32	Foreign,	Married,	Housewife,	Neg.
Blood,	1	Male,	White,	47	Native,	Married,	Machinist,	Pos.
Blood,	1	Male,	White,	28	Native,	Single,	Clerk,	Neg.
Blood,	2nd	Male,	White,		Native,	Single,		Neg.
Blood,	3rd	Female,	White,	52	Native,	Married,	Housewife,	Neg.
Blood,	1	Female,	White,	22	Native,	Single,	Clerk,	Neg.
Blood,	3rd	Female,	White,	23	Native,	Single,	Maid,	Neg.
Blood,	1	Male,	White,	39	Foreign,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,		Foreign,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,	35	Native,	Single,	Flagman,	Pos.
Blood,	1	Male,	White,	24	Native,	Single,		Pos.
Blood,	1	Male,	White,	25	Native,	Married,	Brakeman,	Neg.
Blood,	1	Male,	White,	29	Native,	Married,	Clerk,	Neg.
Blood,	1	Male,	White,	38	Native,	Married,	Brakeman,	Pos.
Blood,	1	Male,	White,	30	Native,	Single,	Weaver,	Neg.
Blood,	1	Female,	White,	22	Native,	Single,	Housework,	Pos.
Blood,	2nd	Male,	White,	30	Native,	Single,	Weaver,	Neg.
Blood,	1	Male,	White,	27	Native,	Single,	Reporter,	Neg.
Blood,	1	Male,	White,	50	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	21	Native,	Single,	Bookkeeper,	Neg.
Blood,	1	Female,	White,	21	Native,	Widow,	Housework,	Neg.
Blood,	1	Male,	White,	56	Native,	Married,	Miller,	Neg.
Blood,	1	Male,	White,	54	Foreign,	Married,	Hatmaker,	Neg.
Blood,	1	Male,	White,	28	Native,	Single,	Clerk,	Pos.

WASSERMANN TESTS—Continued.

Nature of Specimen.	No. of specimens from this patient.	Sex.	Color.	Age.	Native or Foreign.	Conjugal Condition.	Occupation.	Pos. or Negative.
Blood,	1	Male,	White,	38	Native,	Married,	Clerk,	Neg.
Blood,	1	Male,	White,	26	Native,	Single,	Weaver,	Pos.
Blood,	2nd	Male,	White,	26	Native,	Single,	Weaver,	Pos.
Blood,	1	Male,	White,	44	Native,	Single,	Clerk,	Pos.
Blood,	1	Female,	White,	23	Native,	Single,	Waitress,	Pos.
Blood,	1	Male,	White,	58	Native,	Single,	Clerk,	Neg.
Blood,	1	Female,	White,	52	Native,	Married,	Housework,	Pos.
Blood,	1	Female,	White,	52	Native,	Married,		Pos.
Blood,	1	Female,	White,	57	Native,	Married,	Housework,	Pos.
Blood,	1	Male,	White,	35	Native,	Single,	Clerk,	Neg.
Blood,	1	Male,	White,	55	Native,	Married,	Salesman,	Neg.
Blood,	2nd	Male,	White,	55	Native,	Married,	Salesman,	Pos.
Blood,	1	Male,	White,	41	Native,	Married,	Stone cutter,	Pos.
Blood,	2nd	Male,	White,		Native,	Married,	Stone cutter,	Neg.
Blood,	2nd	Male,	White,	53	Native,	Married,	Salesman,	Neg.
Blood,	1	Male,	White,	19	Native,	Single,	Weaver,	Neg.
Blood,	1	Male,	White,	28	Native,	Married,	Dyer,	Neg.
Blood,	1	Male,	White,	33	Native,	Single,	Machinist,	Neg.
Blood,	1	Male,	White,	38	Native,	Married,	Laborer,	Neg.
Blood,	2nd	Male,	White,	27	Native,	Single,	Machinist,	Neg.
Blood,	1	Male,	White,	17	Native,	Single,		Neg.
Blood,	1	Male,	White,	34	Native,	Married,	Clerk,	Pos.
Blood,	1	Female,	White,	32	Native,	Married,	Housewife,	Neg.
Blood,	1	Female,	White,	42	Native,	Married,	Housewife,	Neg.
Blood,	1	Male,	White,	23	Native,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,	25	Native,	Married,	Brakeman,	Pos.
Blood,	1	Male,	Black,		Native,	Married,	Storekeeper,	Pos.
Blood,	1	Male,	White,	25	Foreign,	Single,	Miner,	Neg.
Blood,	1	Female,	White,	33	Foreign,	Married,	Housework,	Neg.
Blood,	1	Female,	White,	37	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	32	Foreign,	Married,	Miner,	Neg.

Blood,	1	Male,	White,	25	Native,	Single,		Neg.
Blood,	1	Male,	White,	40	Native,	Single,	Machinist,	Neg.
Blood,	1	Female,	White,		Foreign,	Widow,		Neg.
Blood,	1	Male,	White,	25	Native,	Married,		Pos.
Blood,	1	Male,	White,		Native,	Married,	Brakeman,	Neg.
Blood,	1	Female,	White,	26	Native,	Single,	Mill girl,	Neg.
Blood,	1	Male,	White,	50	Native,	Single,	Salesman,	Pos.
Blood,	1	Male,	White,	17	Native,	Single,	Laborer,	Pos.
Blood,	1	Female,	White,	28	Native,	Married,	Housewife,	Neg.
Blood,	1	Female,	White,	22	Native,	Married,	Housewife,	Neg.
Blood,	1	Female,	White,	31	Native,	Married,	Housewife,	Neg.
Blood,	1	Female,	White,	27	Native,	Married,	Nurse,	Neg.
Blood,	1	Male,	White,	30	Foreign,	Single,	Machinist,	Pos.
Blood,	1	Male,	White,	50	Native,	Married,	Moulder,	Neg.
Blood,	1	Male,	White,	30	Native,	Single,	Typewriter,	Neg.
Fluid,	1	Male,	White,	53	Foreign,	Married,		Neg.
Blood,	1	Male,	White,	52	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	64	Foreign,	Married,	Laborer,	Neg.
Fluid,	1	Male,	White,	64	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	60	Native,	Married,	Cook,	Neg.
Blood,	1	Male,	White,	33	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	35	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	36	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	29	Native,	Single,	Foreman,	Neg.
Blood,	1	Female,	White,	43	Native,	Married,	Housewife,	Neg.
Blood,	1	Female,	White,	24	Native,	Married,	Housewife,	Neg.
Blood,	1	Female,	White,	35	Foreign,	Single,	Housewife,	Neg.
Blood,	1	Male,	White,	52	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	31	Native,	Single,	Carpenter,	Neg.
Fluid,	2nd	Male,	White,	34	Native,	Single,	Clerk,	Neg.
Blood,	1	Male,	White,	47	Native,	Married,	Watchman,	Pos.
Fluid,	1	Male,	White,	34	Native,	Single,	Clerk,	Neg.
Blood,	1	Male,	White,	31	Native,	Single,		Pos.
Blood,	1	Male,	White,	36	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	36	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	52	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	57	Native,	Widower,		Neg.
Blood,	1	Male,	White,	30	Native,		Railroad,	Neg.
Blood,	1	Male,	White,	26	Native,	Single,	Railroad,	Neg.
Blood,	1	Male,	White,	23	Native,	Single,		Neg.
Blood,	1	Male,	White,	25	Native,	Married,	Carpenter,	Neg.
Blood,	1	Male,	White,	33	Native,	Married,	Peddler,	Pos.
Blood,	1	Male,	White,	32	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	20	Native,	Single,	Bricklayer,	Neg.
Blood,	1	Male,	White,	28	Native,	Married,	Policeman,	Neg.
Blood,	1	Female,	White,	24	Native,	Single,	Maid,	Pos.
Blood,	1	Male,	White,	29	Native,	Single,	Printer,	Neg.
Blood,	1	Male,	White,	31	Native,	Single,	Miner,	Neg
Blood,	1	Female,		34	Native,	Married,	Housewife,	Neg.
Blood,	1	Male,	White,	31	Native,	Married,	Laborer,	Neg.

WASSERMANN TESTS—Continued.

Nature of Specimen.	No. of specimens from this patient.	Sex.	Color.	Age.	Native or Foreign.	Conjugal Condition.	Occupation.	Pos. or Negative.
Blood,	1	Male,	White,	33	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,		42		Married,	Clerk,	Pos.
Blood,	1	Male,	White,	37	Native,	Married,	Brakeman,	Neg.
Blood,	1	Male,	White,	29	Native,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,	17	Native,	Single,		Neg.
Blood,	1	Male,						Neg.
Blood,	1	Male,	White,	37	Native,	Single,	Railroader,	Pos.
Blood,	1	Female,	White,	42	Native,	Widow,	Housework,	Neg.
Blood,	1	Female,	White,	24	Native,	Married,	Housewife,	Neg.
Blood,	1	Female,	White,	43	Native,	Married,	Housewife,	Pos.
Blood,	1	Male,	White,	35	Native,	Single,	Clerk,	Neg.
Blood,	1	Male,	White,	25	Native,	Single,		Neg.
Blood,	1	Male,	White,	42	Foreign,	Widower,	Cook,	Pos.
Blood,	1	Female,	White,	45	Native,	Married,	Housewife,	Neg.
Blood,	1	Male,	Black,	36	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	Black,	36		Married,	Laborer,	Neg.
Blood,	1	Female,	White,	22	Native,	Single,	Maid,	Pos.
Blood,	1	Male,	White,	44	Foreign,	Single,		Neg.
Blood,	1	Female,						Pos.
Blood,	1	Female,	White,	28	Native,	Married,	Housewife,	Neg.
Blood,	1	Male,	White,	23	Native,	Single,	Chauffeur,	Neg.
Blood,	1	Male,	White,	22	Native,	Single,	Chauffeur,	Neg.
Blood,	1	Male,	White,	24	Native,	Single,	Clerk,	Pos.
Blood,	1	Male,	White,	45	Foreign,	Married,	Farmer,	Pos.
Blood,	1	Male,	White,	64	Native,	Married,	Farmer,	Neg.
Blood,	1	Female,	White,	22	Native,	Single,	Merchant,	Neg.
Blood,	1	Female,	White,	50	Native,	Widow,	Housework,	Pos.
Blood,	--	Male,	White,			Single,		Neg.
Blood,	1	Female,	White,	36	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	39	Native,	Married,	Laborer,	Pos.
Blood,	1	Male,	White,	27	Native,	Single,	Laborer,	Neg.

Blood,	1	Male,	White,	23	Native,	Single,	Machinist,	Pos.
Blood,	1	Male,	White,	25	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	9	Native,	Single,		Neg.
Blood,	1	Male,	White,	23	Native,	Single,	Mail carrier,	Pos.
Blood,	1	Male,	White,	17	Native,	Single,	Farmer,	Pos.
Blood,	1	Female,	White,	22	Foreign,	Married,	Housewife,	Pos.
Blood,	1	Male,	White,			Married,	Carpenter,	Neg.
Blood,	1	Male,						Pos.
Blood,	1	Male,	White,	38	Native,	Married,	Glass worker,	Neg.
Blood,	1	Male,	White,	30	Native,	Single,	Clerk,	Neg.
Blood,	1	Male,		38		Single,	Laborer,	Neg.
Blood,	1	Female,	White,	25	Native,	Married,	Housework,	Pos.
Blood,	1	Male,	White,	27	Native,	Single,		Pos.
Blood,	1	Male,	White,	24	Foreign,	Single,	Clerk,	Pos.
Blood,	1	Female,	White,	32	Native,	Married,	Housewife,	Pos.
Blood,	1	Male,		25			Salesman,	Neg.
Blood,	1	Male,	White,	35	Native,	Single,	Brakeman,	Neg.
Blood,	1	Male,	White,	40	Native,	Single,	Miner,	Pos.
Blood,	1	Male,	White,	54	Native,	Married,		Neg.
Blood,	1	Female,	White,	24	Native,	Single,	Musician,	Neg.
Blood,	1	Male,	White,	60	Native,	Divorced,	Miner,	Pos.
Blood,	1	Female,	White,	25	Native,	Married,		Pos.
Blood,	1	Male,	White,	47	Native,	Married,	Grocer,	Pos.
Blood,	1	Male,	White,	34	Native,	Married,	Telephone,	Pos.
Blood,	1	Male,	White,	34	Native,	Married,	Telephone,	Pos.
Blood,	1	Male,	White,	54	Native,		Machinist,	Neg.
Blood,	1	Male,	White,	22	Native,	Single,	Laborer,	Neg.
Blood,	1	Female,	White,	51	Native,	Married,	Housework,	Pos.
Blood,	1	Male,	White,	30	Native,	Single,	Electrician,	Neg.
Blood,	1	Female,	White,	24	Native,	Single,	Domestic,	Neg.
Blood,	1	Male,	White,	27	Native,	Single,		Neg.
Blood,	1	Male,	White,	48	Foreign,	Married,		Pos.
Blood,	1	Male,	White,	43	Native,	Married,	Brakeman,	Neg.
Blood,	1	Male,	White,	26	Native,	Married,	Salesman,	Neg.
Blood,	1	Male,	White,	34	Native,	Single,	Railroader,	Neg.
Blood,	1	Male,	White,	25	Native,	Single,	Laborer,	Pos.
Blood,	1	Female,	White,	22	Native,	Married,	Housewife,	Neg.
Blood,	1	Female,	White,	2	Native,	Single,		Neg.
Blood,	1	Male,	White,	39	Native,	Married,	Clerk,	Neg.
Blood,	1	Male,	White,	48	Native,	Married,	Machinist,	Neg.
Blood,	1	Male,	White,	40	Native,	Married,	Bookkeeper,	Pos.
Blood,	1	Male,	White,	40	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	21	Native,	Married,	Laborer,	Neg.
Blood,	1	Female,	White,	61	Native,	Married,	Housework,	Neg.
Blood,	1	Female,	White,	27	Native,	Single,	Factory work,	Neg.
Blood,	1	Female,	White,	30	Native,	Married,	Factory work,	Neg.
Blood,	1	Female,						Neg.
Blood,	1	Male,	White,	39	Native,	Single,	Merchant,	Pos.
Blood,	1	Male,	White,	22	Foreign,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	28	Native,	Single,	Printer,	Pos.

WASSERMANN TESTS—Continued.

Nature of Specimen.	No. of specimens from this patient.	Sex.	Color.	Age.	Native or Foreign.	Conjugal Condition.	Occupation.	Pos. or Negative.
Blood,	1	Male,	White,	20	Native,	Single,	Crane operator,	Neg.
Blood,	1	Male,	White,	38	Native,	Single,	Machinist,	Neg.
Blood,	1	Male,	White,	48	Native,	Married,		Neg.
Blood,	1	Female,	White,	34		Married,	Housework,	Neg.
Blood,	1	Male,	White,	45	Native,	Married,		Neg.
Blood,	1	Male,	White,	22	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	25		Married,		Neg.
Blood,	1	Male,	White,	24		Single,	Organist,	Neg.
Blood,	1	Male,	White,	32	Native,	Single,	Clerk,	Pos.
Blood,	1	Male,	White,	25		Single,	Teacher,	Pos.
Blood,	1	Female,	White,	32	Native,	Married,	Housewife,	Neg.
Blood,	1	Male,	White,		Native,	Married,		Pos.
Blood,	1	Male,	White,	28	Foreign,	Single,	Iron moulder,	Neg.
Blood,	1	Male,	White,		Native,	Married,	Barber,	Neg.
Blood,	1	Male,	White,	26	Native,	Married,	Clerk,	Pos.
Blood,	1	Female,	White,	20	Native,	Married,	Housewife,	Neg.
Blood,	1	Male,	White,	48	Foreign,	Single,	Hotel porter,	Neg.
Blood,	1	Male,	White,	23	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	26	Native,	Single,	Clerk,	Neg.
Blood,	1	Male,	White,	38	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	48	Native,	Married,	Painter,	Neg.
Blood,	1	Male,	White,	52	Native,	Married,	Lumberman,	Neg.
Blood,	1	Male,	White,	28	Native,	Single,	Clerk,	Pos.
Blood,	1	Male,						Neg.
Blood,	1	Male,	White,	19		Single,		Neg.
Blood,	1	Male,		20			Student,	Neg.
Blood,	1	Male,	White,	27	Native,	Single,	Laborer,	Pos.
Blood,	1	Female,	White,	26	Native,	Single,		Neg.
Blood,	1	Female,	White,	31	Native,	Single,		Neg.
Blood,	1	Female,	White,	20	Native,	Single,	Laborer,	Neg.
Blood,	1	Female,	White,	29	Native,	Married,	Wife,	Pos.

Blood,	1	Male,	White,	29	Native,	Married,	Clerk,	Neg.
Blood,	1	Female,	White,	40	Native,	Married,	Housewife,	Neg.
Blood,	1	Female,	White,	60	Foreign,	Widow,		Neg.
Blood,	1	Female,	White,	35	Native,	Single,	Laborer,	Neg.
Blood,	1	Female,	White,	33	Native,	Widow,	Hotel worker,	Neg.
Blood,	1	Female,	White,	20	Native,	Divorced,		Pos.
Blood,	1	Male,	White,	45	Native,	Married,		Neg.
Blood,	1	Male,	White,	21	Native,	Single,	Laborer,	Pos.
Blood,	1	Female,		21	Native,	Widow,		Pos.
Blood,	1	Male,	White,	40	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	40	Native,	Widower,	Laborer,	Neg.
Blood,	1	Female,	White,	23	Native,	Single,		Neg.
Blood,	1	Male,	White,	27	Native,	Married,	Conductor,	Neg.
Blood,	1	Male,	White,	51	Foreign,	Married,	Clerk,	Neg.
Blood,	1	Male,	White,	34	Foreign,	Married,		Neg.
Blood,	1	Female,	White,	26	Native,	Divorced,		Neg.
Blood,	1	Male,	White,	30	Foreign,	Married,		Neg.
Blood,	1	Male,	White,	30	Foreign,	Married,		Neg.
Blood,	1	Male,	White,	44	Native,	Single,		Neg.
Blood,	1	Male,	White,	30	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	64	Native,	Married,		Neg.
Blood,	1	Male,	White,	40	Native,	Married,	Farmer,	Pos.
Blood,	1	Male,	White,	34	Native,	Married,	Carpenter,	Neg.
Blood,	1	Male,	White,	25	Native,	Single,	Laborer,	Neg.
Blood,	1	Female,	White,	24	Native,	Single,	Housework,	Neg.
Blood,	1	Male,	White,	28	Native,	Single,	Farmer,	Pos.
Blood,	1	Male,	White,	52	Native,	Widower,	Janitor,	Neg.
Blood,	1	Male,	White,	32	Native,	Single,	Steel worker,	Neg.
Blood,	1	Male,	White,	25	Native,	Single,	Machinist,	Neg.
Blood,	1	Male,	White,	62				Pos.
Blood,	1	Male,	White,	35	Native,	Married,	Electrician,	Neg.
Blood,	1	Male,	White,	52	Native,	Married,		Neg.
Blood,	1	Male,	White,	42	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	28	Foreign,	Married,	Miner,	Neg.
Blood,	1	Female,	White,	38	Native,	Single,	Housework,	Neg.
Blood,	1	Male,	White,	27	Native,	Married,	Merchant,	Pos.
Blood,	1	Female,	White,	36	Native,	Married,	Housework,	Pos.
Blood,	1	Male,	White,	56	Native,	Married,	Salesman,	Neg.
Blood,	1	Female,	White,	27	Foreign,	Married,	Domestic,	Pos.
Blood,	1	Male,	White,	47	Native,	Married,	Machinist,	Pos.
Blood,	1	Male,	White,	36	Native,	Married,	Hostler,	Neg.
Blood,	1	Male,	White,	22	Native,	Single,	Electrician,	Neg.
Blood,	1	Male,	White,	18	Native,	Single,	Clerk,	Neg.
Blood,	1	Male,	White,	50	Foreign,	Married,	Butcher,	Neg.
Blood,	1	Male,	White,	23	Native,	Married,		Neg.
Blood,	1	Female,	White,	23	Native,	Married,		Neg.
Blood,	1	Male,	White,	22	Native,	Single,	Printer,	Pos.
Blood,	1	Male,	White,	27	Native,	Single,	Clerk,	Pos.
Blood,	1							Neg.
Blood,	1	Male,	White,	34	Native,	Single,	Brakeman,	Neg.

WASSERMANN TESTS—Continued.

Nature of Specimen.	No. of specimens from this patient.	Sex.	Color.	Age.	Native or Foreign.	Conjugal Condition.	Occupation.	Pos. or Negative.
Blood,	1	Female,	White,	42	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	52	Native,	Married,	Farmer,	Neg.
Blood,	1	Male,	White,	45	Native,	Married,	Farmer,	Pos.
Blood,	1	Female,	White,	30	Native,	Married,	Housewife,	Neg.
Blood,	1	Male,	White,	42	Native,	Married,	Farmer,	Pos.
Blood,	1	Male,	White,	26	Native,	Single,	Clerk,	Neg.
Blood,	1	Male,	White,	34	Native,	Married,	Bookkeeper,	Neg.
Blood,	1	Female,	White,	10	Native,	Single,	School girl,	Pos.
Blood,	1	Female,	White,	50	Native,	Married,	Housewife,	Neg.
Blood,	1	Male,	White,	38	Foreign,	Married,	Housewife,	Neg.
Blood,	1	Male,	White,	45	Native,	Single,	Miner,	Pos.
Blood,	1	Male,	White,	2	Foreign,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	25	Native,	Single,	Draughtsman,	Neg.
Blood,	1	Male,	White,	50	Native,	Single,	Teamster,	Pos.
Blood,	1	Female,	White,	61	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	43	Native,	Married,	Laborer,	Pos.
Blood,	1	Male,	White,	18	Native,	Single,		Neg.
Blood,	1	Male,	White,	19	Native,	Single,	Weaver,	Neg.
Blood,	1	Male,	White,	25	Native,	Married,	Laborer,	Pos.
Blood,	1	Male,	White,	29	Native,	Married,	Railroader,	Pos.
Blood,	1	Female,	White,	21	Native,	Single,		Pos.
Blood,	1	Male,	White,	53	Native,	Single,		Neg.
Blood,	1	Male,	White,	39	Foreign,		Hotel porter,	Neg.
Blood,	1	Male,	White,	28	Native,	Single,	Engineer,	Neg.
Blood,	1	Male,	White,	18	Foreign,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	22	Foreign,	Single,	Hotel porter,	Neg.
Blood,	1	Male,	White,	30	Foreign,	Single,	Miner,	Neg.
Blood,	1	Male,	White,	31	Foreign,	Single,	Miner,	Neg.
Blood,	1	Male,	White,	31	Foreign,	Single,	Miner,	Neg.
Blood,	1	Male,	White,	28	Native,	Married,	Speculator,	Pos.
Blood,	1	Male,	White,	35	Native,	Married,	Clerk,	Pos.

Blood,	1	Male,	White,	42			Butcher,		Neg.
Blood,	1	Male,	White,	50	Native,		Laborer,		Neg.
Blood,	1	Male,	White,	21	Native,	Single,	Plumber,		Neg.
Blood,	1	Male,	White,	32	Native,	Married,	Clerk,		Neg.
Blood,	1	Male,	White,	28	Foreign,	Single,	Laborer,		Pos.
Blood,	1	Male,	White,	27	Native,	Single,	Carpenter,		Neg.
Blood,	1	Male,	White,	25	Native,	Single,	Butcher,		Pos.
Blood,	1	Male,	White,	27	Foreign,	Single,	Porter,		Pos.
Blood,	1	Female,	White,	23	Native,	Married,	Housewife,		Neg.
Blood,	1	Male,	White,	24	Native,	Single,	Clerk,		Pos.
Blood,	1	Male,	White,	26	Native,	Single,	Mechanic,		Neg.
Blood,	1	Male,	White,	45	Native,	Widower,	Laborer,		Neg.
Blood,	1	Male,	White,	21	Foreign,	Single,	Student,		Neg.
Blood,	1	Male,	White,	25	Native,	Married,	Student,		Pos.
Blood,		Male,	White,	23	Native,	Single,			Pos.
Blood,	1	Male,	White,	24	Native,	Single,	Student,		Neg.
Blood,	1	Female,	White,	21	Native,	Single,	Mill hand,		Neg.
Blood,	1	Male,	White,	21	Native,	Single,	Student,		Neg.
Blood,	1	Male,	White,	23	Native,	Single,	Student,		Pos.
Blood,	1	Male,	White,	25	Native,	Single,	Student,		Pos.
Blood,	1	Male,	White,	25	Native,	Single,	Clerk,		Neg.
Blood,	1	Male,	White,	25	Native,	Single,	Clerk,		Pos.
Blood,	1	Male,	White,	27	Native,	Single,	Clerk,		Neg.
Blood,	1	Male,	White,	25	Native,	Single,	Clerk,		Neg.
Blood,	1	Female,	White,	17	Native,	Single,	Housework,		Neg.
Blood,	1	Male,	White,	24	Native,	Single,	Laborer,		Pos.
Blood,	1	Female,	White,	10	Native,	Single,	School,		Neg.
Blood,	1	Male,	White,	43	Native,	Married,			Pos.
Blood,	1	Male,	White,	51	Native,	Married,	Engineer,		Neg.
Blood,	1	Male,	White,	36	Native,	Married,	Laborer,		Neg.
Blood,	1	Male,	White,	19	Native,	Single,	Laborer,		Neg.
Blood,	1	Male,	White,	30	Native,	Married,	Laborer,		Neg.
Blood,	1	Male,	White,	34	Native,	Married,	Laborer,		Pos.
Blood,	1	Male,	White,	34	Native,	Married,	Musician,		Neg.
Blood,	1	Female,	White,	34	Native,	Married,	Housewife,		Pos.
Blood,	1	Female,	White,	27	Native,	Married,	Housewife,		Pos.
Blood,	1	Male,	White,	37	Native,	Married,	Insurance agent,		Pos.
Blood,	1	Male,	White,	33	Native,	Married,	Salesman,		Neg.
Blood,	1	Male,	White,	22	Native,	Single,	Chemist,		Neg.
Blood,	1	Male,	White,	22	Native,	Single,	Barber,		Pos.
Blood,									Neg.
Blood,	1	Male,	White,		Native,	Single,	Clerk,		Neg.
Blood,	1	Male,	White,	36	Native,	Married,			Pos.
Blood,	1	Male,	White,	25	Native,	Married,			Pos.
Blood,	1								Neg.
Blood,	1	Male,	White,	8	Native,	Single,	School boy,		Neg.
Blood,	1	Male,	White,	34	Native,	Married,	Laborer,		Neg.
Blood,	1	Male,	White,	25	Native,	Single,	Clerk,		Neg.
Blood,	1								Neg.
Blood,	1	Male,	White,		Native,	Single,	Electrician,		Neg.

WASSERMANN TESTS—Continued.

Nature of Specimen.	No. of specimens from this patient.	Sex.	Color.	Age.	Native or Foreign.	Conjugal Condition.	Occupation.	Pos. or Negative.
Blood,	1							Neg.
Blood,	1	Male,	White,	40		Married,	Oil producer,	Neg.
Blood,	1	Male,	White,	45	Native,	Married,	Engineer,	Neg.
Blood,	1	Female,	White,	22	Native,	Married,	Housewife,	Pos.
Blood,	1	Male,	White,	26	Native,	Single,	Clerk,	Neg.
Blood,	1	Male,		26	Native,	Single,	Clerk,	Neg.
Blood,	1	Female,	White,	23	Native,	Married,	Housewife,	Pos.
Blood,	1	Male,	White,		Foreign,	Married,	Miner,	Pos.
Blood,	1	Male,	White,	30	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	28	Foreign,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	23	Foreign,	Single,	Laborer,	Pos.
Blood,	1	Female,	White,	27	Foreign,	Married,	Housewife,	Neg.
Blood,	1	Male,	White,		Foreign,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	36	Foreign,	Married,	Clerk,	Neg.
Blood,	1	Male,	White,	30	Native,	Married,	Clerk,	Pos.
Blood,	1	Male,	White,	40	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	23	Foreign,	Single,	Fireman,	Neg.
Blood,	1	Male,	White,	36	Foreign,	Married,	Baker,	Pos.
Blood,	1	Male,	White,	22	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Female,	White,	46	Native,	Married,	Housewife,	Neg.
Blood,	1	Female,	White,	27	Native,	Married,	Housewife,	Neg.
Blood,	1	Male,	White,	23	Native,	Single,	Machinist,	Pos.
Blood,	1	Male,	White,	22	Foreign,	Single,	Fireman,	Pos.
Blood,	1	Male,						Neg.
Blood,	1	Male,	White,		Foreign,	Married,	Laborer,	Neg.
Blood,	1	Female,	White,	43	Native,	Single,	Housework,	Neg.
Blood,	1	Female,	White,	48	Native,	Married,	Mill hand,	Neg.
Blood,	1	Male,	White,	26				Neg.
Blood,	1	Male,	White,	21	Native,	Married,		Pos.
Blood,	1	Male,	White,	28	Foreign,	Single,	Barber,	Pos.
Blood,	1	Male,	White,	24	Foreign,	Single,		Neg.

Blood,								Neg.
Blood,	1	Male,	White,	45	Native,	Married,	Barber,	Neg.
Blood,	2nd	Female,	White,		Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	39	Native,	Married,	Conductor,	Pos.
Blood,	1	Male,	White,	34	Native,	Married,	Clerk,	Neg.
Blood,	1	Female,	White,	17	Native,	Single,	Mill girl,	Neg.
Blood,	1	Female,	White,	24	Native,	Single,	Clerk,	Pos.
Blood,	1	Male,	White,	26	Native,	Married,	Laborer,	Pos.
Blood,	1	Female,	White,	22	Foreign,	Married,	Housework,	Pos.
Blood,	1	Male,	White,	32	Native,	Married,		Pos.
Blood,	1	Male,	White,	28	Native,	Married,	Factory,	Neg.
Blood,	1	Female,	White,	35	Native,	Married,	Mill,	Neg.
Blood,	1	Male,	White,	40	Foreign,	Single,	Laborer,	Pos.
Blood,	1	Female,	White,	30	Native,	Divorced,	Housework,	Neg.
Blood,	1	Male,	White,	40	Native,	Married,	Foreman,	Neg.
Blood,	1	Male,	White,	56	Native,	Widower,	Laborer,	Neg.
Blood,	1	Female,	White,	42	Native,	Single,	Housework,	Neg.
Blood,	1	Male,	White,			Single,	Miner,	Pos.
Blood,	1	Male,	White,	33	Native,	Single,	Carpenter,	Neg.
Blood,	1	Male,	White,	30	Native,	Single,	Carpenter,	Pos.
Blood,	1	Female,						Pos.
Blood,	1	Male,	White,	24	Foreign,	Single,		Neg.
Blood,	1	Male,	White,	40	Native,	Single,		Neg.
Blood,	1	Male,	White,	30	Native,	Single,	Farmer,	Neg.
Blood,	1	Female,	White,	42	Native,	Married,		Neg.
Blood,	1	Male,	White,	24	Native,	Single,	Laborer,	Pos.
Blood,	1	Female,	White,	35	Native,	Married,		Pos.
Blood,	1	Male,	White,	52	Foreign,	Married,	Miner,	Neg.
Blood,	1	Female,	White,	31	Foreign,	Married,	Housewife,	Neg.
Blood,	1	Male,	White,	30	Native,	Single,		Neg.
Blood,	1	Female,	White,	48	Native,	Married,	Housewife,	Neg.
Blood,	1	Male,	White,	48	Native,	Married,	Miner,	Neg.
Blood,	1	Male,	White,	37	Native,	Single,	Clerk,	Neg.
Blood,	1	Female,	White,	32	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	27	Native,	Single,	Farmer,	Pos.
Blood,	1	Male,	White,	35	Native,	Married,		Neg.
Blood,	1	Male,	White,	23	Native,	Single,		Pos.
Blood,	1	Male,	White,	38	Native,	Married,	Laborer,	Pos.
Blood,	1	Male,	White,	50	Native,	Married,	Machinist,	Neg.
Blood,	1	Female,	White,	30	Native,	Married,	Housework,	Pos.
Blood,	1	Female,	White,	41	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	35	Native,	Married,	Miner,	Pos.
Blood,	1	Male,	White,	25	Native,	Single,	Railroader,	Neg.
Blood,	1	Male,	White,	27	Foreign,	Single,	Laborer,	Pos.
Blood,	1	Female,	White,	22	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	59	Foreign,	Widower,		Neg.
Blood,	1	Male,	White,	28	Foreign,	Single,	Mill,	Neg.
Blood,	1	Female,						Pos.
Blood,	1	Female,	White,	33	Foreign,	Married,	Housework,	Pos.
Blood,	1	Male,	White,	24	Foreign,	Single,	Laborer,	Neg.

WASSERMANN TESTS—Continued.

Nature of Specimen.	No. of specimens from this patient.	Sex.	Color.	Age.	Native or Foreign.	Conjugal Condition.	Occupation.	Pos. or Negative.
Blood,	1	Male,	White,	32	Foreign,	Married,	Laborer,	Pos.
Blood,	1	Female,	White,	25	Foreign,	Married,	Housework,	Pos.
Blood,	1	Female,						Neg.
Blood,	1	Male,	White,	28	Native,	Single,	Factory,	Pos.
Blood,	1	Male,	White,	21	Native,	Single,	Railroader,	Pos.
Blood,	1	Male,	White,	59	Native,	Married,	Pattern maker,	Neg.
Blood,	1	Male,	White,	20	Native,	Single,	Crane operator,	Neg.
Blood,	1	Female,	White,	42	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	24	Native,	Single,	Railroader,	Neg.
Blood,	1	Male,	White,	32	Native,	Single,		Pos.
Blood,	1	Male,	White,	29	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	26	Native,	Single,	Laborer,	Neg.
Blood,	1	Female,	White,	57	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	25	Native,	Single,	Clerk,	Neg.
Blood,	1	Female,	White,	47	Native,	Married,	Clerk,	Neg.
Blood,	1	Female,	White,	25	Foreign,	Married,	Housework,	Neg.
Blood,	1	Female,	White,	20	Native,	Single,	Nurse,	Neg.
Blood,	2nd	Female,	White,	63	Native,	Single,	Laborer,	Neg.
Blood,	1	Female,	White,	18	Native,	Single,	Maid,	Neg.
Blood,	1	Female,	White,	24	Foreign,	Married,	Housewife,	Neg.
Blood,	1	Male,	White,	19	Native,	Single,	Driver,	Neg.
Blood,	1	Male,	White,	25	Foreign,	Married,	Clerk,	Pos.
Blood,	1	Male,	White,	20	Foreign,	Single,	Mill,	Neg.
Blood,	1	Male,	White,	25	Native,	Single,	Plumber,	Neg.
Blood,	1	Male,	White,	22	Native,	Single,	Clerk,	Neg.
Blood,	1	Female,	White,	25	Foreign,	Married,	Housewife,	Neg.
Blood,	1	Male,	White,	24	Native,	Single,	Laborer,	Neg.
Blood,	2nd	Male,	White,	26	Native,	Single,	Electrician,	Neg.
Blood,	1	Female,	White,	42	Native,	Married,	Housework,	Pos.
Blood,	1	Male,	White,	32	Native,	Married,	Agent,	Pos.
Blood,	1	Female,	White,	40	Native,	Married,	Housework,	Neg.

Blood,	1	Male,	White,		18	Native,	Single,	Laborer,					Pos.
Blood,	1	Female,	White,		45	Native,	Married,	Housework,					Pos.
Blood,	1	Male,	White,		33	Native,	Married,	Gardener,					Neg.
Blood,	1	Female,	White,		51	Native,	Married,						Neg.
Blood,	1	Male,	White,		46	Native,	Married,						Neg.
Blood,	1	Male,	White,			Native,	Single,						Neg.
Blood,	1	Female,	White,		22	Native,	Widow,	Factory,					Pos.
Blood,	1	Female,			23	Native,	Married,	Laborer,					Neg.
Blood,	1	Male,	White,		46	Native,	Single,	Brakeman,					Pos.
Blood,	1	Male,	White,		49	Native,	Married,	Policeman,					Neg.
Blood,	1	Male,	White,		30	Native,	Married,	Brakeman,					Neg.
Blood,	1	Female,	White,		28	Native,	Married,	Housework,					Neg.
Blood,	1	Male,	White,		35	Native,	Married,	Clerk,					Neg.
Blood,	1	Male,	White,		25	Native,	Married,	Steel worker,					Neg.
Blood,	1	Male,	White,		32	Foreign,	Single,	Laborer,					Neg.
Blood,	1	Male,	White,		36	Native,	Single,	Agent,					Pos.
Blood,	1	Male,	White,			Native,	Single,	Laborer,					Neg.
Blood,	1	Male,	Black,		37	Native,	Married,	Laborer,					Neg.
Blood,	1	Male,	White,		54	Native,	Married,	Blacksmith,					Neg.
Blood,	1	Male,	White,		25	Foreign,	Single,	Steel worker,					Pos.
Blood,	1	Female,	White,		38	Native,	Married,	Housework,					Neg.
Blood,	1	Male,	White,		43	Native,	Married,						Neg.
Blood,	1	Male,	White,		22	Native,	Single,	Clerk,					Neg.
Blood,	1	Male,	Black,		26	Native,	Married,	Porter,					Pos.
Blood,	2nd	Male,	White,		24	Native,	Single,						Pos.
Blood,	1	Male,	White,			Native,	Single,						Neg.
Blood,	1	Female,	White,		21	Native,	Single,	Maid,					Pos.
Blood,	1	Female,	White,		21	Native,	Single,	Maid,					Neg.
Blood,	1	Male,	White,		24	Native,	Married,	Salesman,					Neg.
Blood,	1	Female,	White,		19	Native,	Married,	Housewife,					Neg.
Blood,	1	Male,	Black,		32	Native,	Married,	Chauffeur,					Pos.
Blood,	1	Male,	White,		26	Native,	Married,	Laborer,					Neg.
Blood,	1	Female,	White,		22	Native,	Married,						Neg.
Blood,	1	Female,	White,		24	Native,	Married,	Dressmaker,					Neg.
Blood,	1	Female,	White,			Native,	Married,	Housewife,					Neg.
Blood,	1	Male,	White,		22	Native,	Single,	Chauffeur,					Pos.
Blood,	1	Female,	White,		27	Foreign,	Married,						Neg.
Blood,	1	Female,	White,		33	Foreign,	Married,	Housewife,					Pos.
Blood,	1	Female,	White,		35	Native,	Married,	Housewife,					Pos.
Blood,	1	Male,	White,		42	Native,	Married,	Laborer,					Neg.
Blood,	1	Male,	White,		38	Native,	Married,	Electrician,					Neg.
Blood,	1	Male,	White,		20	Native,	Single,	Chauffeur,					Pos.
Blood,	1	Male,	White,		39	Native,	Widower,	Clerk,					Neg.
Blood,	1	Male,	White,		44	Native,	Single,	Clerk,					Pos.
Blood,	1	Male,	White,		52	Native,	Married,	Butcher,					Neg.
Blood,	1	Male,	White,			Native,	Single,	Tailor,					Neg.
Blood,	1	Male,	White,		26	Native,	Single,	Druggist,					Neg.
Blood,	1	Male,	White,		21	Native,	Single,	Student,					Neg.
Blood,	1	Male,	White,		26	Native,	Single,	Student,					Neg.
Blood,	1	Female,	White,		51	Native,	Single,	Cook,					Pos.

WASSERMANN TESTS—Continued.

Nature of Specimen.	No. of specimens from this patient.	Sex.	Color.	Age.	Native or Foreign.	Conjugal Condition.	Occupation.	Pos. or Negative.
Blood,	1	Female,	White,	40	Native,	Single,	Housework,	Pos.
Blood,	1	Male,	White,	22	Native,	Single,		Pos.
Blood,	1	Male,	White,	35	Foreign,	Married,	Miner,	Neg.
Blood,	1	Male,	White,	34	Native,	Single,	Engineer,	Pos.
Blood,	1	Male,	White,	32	Native,	Single,		Pos.
Blood,	1	Male,	White,	27	Native,	Single,	Laborer,	Neg.
Blood,	1	Female,	White,	26	Native,	Married,	Looper,	Pos.
Blood,	1	Male,	White,	36	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	65	Native,	Widower,	Mechanic,	Neg.
Blood,	1	Male,	White,	30	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	36	Native,	Single,	Engineer,	Pos.
Blood,	1	Female,	White,	18	Native,	Married,	Prostitute,	Neg.
Blood,	1	Female,	White,	33	Native,	Married,	Housewife,	Pos.
Blood,	1	Male,	White,	37	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	29	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	39	Native,	Married,	Laborer,	Pos.
Blood,	1	Male,	White,	26	Native,	Single,	Laborer,	Neg.
Blood,	2nd	Male,	White,	30	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	20	Native,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,	22	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	31	Native,	Married,	Laborer,	Neg.
Blood,	1	Female,	White,	33	Native,	Married,	Housewife,	Neg.
Blood,	1	Male,	White,	34	Native,	Married,	Salesman,	Neg.
Blood,	1	Male,	White,	24	Native,	Single,	Clerk,	Neg.
Blood,	1	Male,	White,	35	Native,	Married,	Laborer,	Pos.
Blood,	1	Male,	White,	53	Native,	Married,	Engineer,	Neg.
Blood,	1	Male,	White,	40	Native,	Married,	Carpenter,	Neg.
Blood,	1	Male,	White,	24	Native,	Single,	Clerk,	Neg.
Blood,	1	Male,	White,		Native,	Single,	Machinist,	Neg.
Blood,	1	Male,	White,	28	Native,	Single,	Machinist,	Neg.
Blood,	1	Male,	White,	35		Married,	Brakeman,	Pos.

Blood,	1	Male,	White,	28	Native,	Married,	Moulder,	Pos.
Blood,	1	Male,	White,	33	Native,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,	29	Native,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,	29	Native,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,	41	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	32	Native,	Single,	Insurance,	Neg.
Blood,	1	Male,	White,	38	Native,	Single,	Laborer,	Neg.
Blood,	1	Female,	White,	42	Native,	Married,	Housewife,	Neg.
Blood,	1	Male,	White,	41	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	32	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	62	Native,	Widower,	Farmer,	Neg.
Blood,	1	Female,	White,	36	Native,	Single,	Domestic,	Neg.
Blood,	1	Female,	White,	51	Native,	Married,	Housewife,	Neg.
Blood,	1	Female,	White,	24	Native,	Single,	Stenographer,	Neg.
Blood,	1	Female,	White,	36	Native,	Widow,	Nurse,	Neg.
Blood,	1	Male,	White,	40		Married,	Clothier,	Neg.
Blood,	1	Male,	White,	51	Native,	Married,	Physician,	Neg.
Blood,	1	Male,	White,	25	Native,	Single,	Blacksmith,	Neg.
Blood,	1	Male,	White,	22	Native,	Single,	Clerk,	Neg.
Blood,	1	Male,	White,	28	Foreign,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	29	Native,	Married,		Neg.
Blood,	1	Male,	White,	42			Fireman,	Neg.
Blood,	1	Male,	White,	25	Native,	Single,	Laborer,	Pos.
Blood,	1	Female,	White,	38		Divorced,	Housewife,	Neg.
Blood,	1	Female,	White,	36		Divorced,		Neg.
Blood,	1	Male,	White,	27	Native,	Married,	Driver,	Neg.
Blood,	1	Male,	White,	50		Single,		Neg.
Blood,		Male,	White,	22				Neg.
Blood,	1	Male,	White,		Native,	Divorced,	Agent,	Neg.
Blood,	1	Male,	White,	27	Native,	Single,	Agent,	Pos.
Blood,	1	Male,	White,	28	Native,	Single,	Salesman,	Neg.
Blood,	1	Male,	White,	53		Married,	Miner,	Neg.
Blood,	1	Female,	White,	32		Married,		Neg.
Blood,	1	Male,		57	Native,	Married,	Miner,	Neg.
Blood,	1	Male,	Black,	30	Native,	Married,	Laborer,	Pos.
Blood,	1	Female,	White,	45	Foreign,	Married,		Neg.
Blood,	1	Male,	White,	45		Married,		Neg.
Blood,	1	Female,	White,	36	Native,	Married,	Housewife,	Neg.
Blood,	1	Female,	White,	42	Native,	Married,	Housewife,	Neg.
Blood,	1	Male,	White,	33	Native,	Married,	Laborer,	Neg.
Blood,	1	Female,	White,	22	Foreign,	Single,	Housework,	Neg.
Blood,	1	Female,	White,	26	Native,	Married,		Neg.
Blood,	1	Male,	White,	26	Foreign,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	23	Native,	Single,	Laborer,	Neg.
Blood,	1	Female,	White,	40	Native,	Married,	Housekeeper,	Neg.
Blood,	1	Female,	White,	29	Native,	Divorced,	Factory,	Neg.
Blood,	1	Male,	White,	30	Native,	Single,	Farmer,	Neg.
Blood,	1	Male,	White,	50	Native,	Married,	Clerk,	Pos.
Blood,	1	Female,	White,	16	Native,	Single,		Neg.
Blood,	1	Male,	White,	30	Foreign,	Single,	Farmer,	Pos.

WASSERMANN TESTS—Continued.

Nature of Specimen.	No. of specimens from this patient.	Sex.	Color.	Age.	Native or Foreign.	Conjugal Condition.	Occupation.	Pos. or Negative.
Blood,	1	Male,	White,	37	Native,	Married,	Electrician,	Neg.
Blood,	1	Female,	White,	50	Foreign,	Widow,		Neg.
Blood,	1	Male,	White,	28	Native,	Single,	Bookkeeper,	Neg.
Blood,	1	Male,	White,	45	Native,	Married,	Clerk,	Pos.
Blood,	1	Male,	White,	28	Native,	Single,	Clerk,	Neg.
Blood,	1	Male,	White,	28	Native,	Single,		Neg.
Blood,	1	Male,	White,	59	Foreign,	Single,	Bartender,	Neg.
Blood,	1	Male,	White,	28	Native,	Married,	Laborer,	Pos.
Blood,	1							Pos.
Blood,	1	Female,	White,	40	Native,	Married,	Housewife,	Neg.
Blood,	1	Female,	White,	46	Native,	Married,	Housewife,	Neg.
Blood,	1	Female,	White,	30	Foreign,	Married,	Housewife,	Neg.
Blood,	1	Male,	White,	60	Native,	Married,	Merchant,	Pos.
Blood,	1	Male,	White,	57	Native,	Married,	Merchant,	Pos.
Blood,	1	Female,	White,	24	Native,	Single,	Weaver,	Neg.
Blood,	1	Female,	White,	38	Foreign,	Married,	Housewife,	Neg.
Blood,	2nd	Male,	White,					Pos.
Blood,	1	Male,	White,	40	Native,	Married,	Miner,	Neg.
Blood,	1	Female,	White,	36	Foreign,	Married,	Housewife,	Neg.
Blood,	1	Male,	White,	35	Foreign,	Married,	Merchant,	Neg.
Blood,	1	Female,	White,	40	Native,	Married,	Housewife,	Neg.
Blood,	1	Female,	White,	51	Native,	Married,	Housewife,	Neg.
Blood,	1	Male,	White,	35	Foreign,	Single,	Merchant,	Neg.
Blood,	1	Male,	White,	60	Native,	Married,	Engineer,	Neg.
Blood,	1	Male,	White,	45	Native,	Married,	Clerk,	Neg.
Blood,	1	Male,	White,	45	Native,	Married,	Clerk,	Neg.
Blood,	1	Male,	White,	32	Native,	Single,	Railroader,	Neg.
Blood,	1	Male,	White,	43	Native,	Married,	Miner,	Neg.
Blood,	1	Male,	White,	43	Native,	Married,	Miner,	Pos.
Blood,	1	Male,	White,	27	Native,	Single,	Painter,	Neg.
Blood,	1	Female,	White,	40	Native,	Married,	Housewife,	Pos.

Blood,	1	Male,	White,	35	Native,	Married,	Clerk,	Pos.
Blood,	1	Male,	White,	37	Foreign,	Married,	Moulder,	Pos.
Blood,	1	Female,	White,	30	Foreign,	Married,	Housewife,	Pos.
Blood,	1	Female,	White,	28	Native,	Married,	Housewife,	Neg.
Blood,	1	Male,	White,	34	Foreign,	Single,	Iron worker,	Neg.
Blood,	1	Male,	White,	25	Native,	Single,	Tailor,	Neg.
Blood,	1	Male,	White,	24	Native,	Single,	Painter,	Pos.
Blood,	1	Female,	White,	35	Native,	Married,	Domestic,	Neg.
Blood,	1	Female,	White,	22	Native,	Single,		Neg.
Blood,	1	Male,	White,	23	Foreign,	Single,	Waiter,	Pos.
Blood,	1	Male,	White,	23	Native,	Single,	Clerk,	Pos.
Blood,	1	Male,	White,	20	Native,	Single,	Miner,	Pos.
Blood,	1	Female,	White,	54	Native,	Widow,	Housekeeper,	Pos.
Blood,	1	Male,	White,	32	Native,	Single,	Farmer,	Neg.
Blood,	1							Neg.
Blood,	1	Male,	White,	47	Native,	Married,	Machinist,	Pos.
Blood,	1	Male,	White,	32	Native,	Single,	Bookkeeper,	Neg.
Blood,	1	Male,	White,	52	Native,	Married,	Tinsmith,	Neg.
Blood,	1	Female,	White,	46	Native,	Single,	Housework,	Pos.
Blood,	1	Male,	White,	35	Native,	Married,	Farmer,	Neg.
Blood,	1	Male,		30		Single,		Neg.
Blood,	1	Male,	White,	45	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	52	Native,	Single,	Car inspector,	Neg.
Blood,	1	Female,	White,	26	Native,	Single,	Housework,	Pos.
Blood,	1	Female,	White,	30	Native,	Single,	Housework,	Pos.
Blood,	1	Male,	White,	47	Native,	Married,	Laborer,	Pos.
Blood,	1	Male,	White,	29	Foreign,	Married,		Neg.
Blood,	1	Male,	White,	22	Native,	Single,		Pos.
Blood,	1	Male,	White,	26	Native,	Married,	Merchant,	Neg.
Blood,	1	Male,	White,	26	Native,	Single,	Teacher,	Pos.
Blood,	1	Male,		20	Native,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,	45	Native,	Married,	Clerk,	Neg.
Blood,	1	Male,	White,	34	Native,	Single,	Laborer,	Pos.
Blood,	1	Male,		52	Native,	Married,	Farmer,	Pos.
Blood,	1	Female,	White,	51	Native,	Married,	Housework,	Pos.
Blood,	1	Male,	White,	50	Native,	Married,	Farmer,	Pos.
Blood,	1	Female,	White,	30	Native,	Married,	Housewife,	Neg.
Blood,	1	Female,	Black,	17		Single,		Neg.
Blood,	1	Male,	White,	26	Foreign,	Single,	Agent,	Pos.
Blood,	1	Female,	White,	15	Native,	Single,		Neg.
Blood,	1	Male,	White,	28	Native,	Married,	Painter,	Neg.
Blood,	1	Female,	White,	19	Native,	Single,	Housework,	Pos.
Blood,	1	Female,	White,	42	Native,	Widow,		Pos.
Blood,	1	Female,	White,	32	Native,	Married,	Housework,	Pos.
Blood,	1	Male,	White,	18	Native,	Single,		Neg.
Blood,	1	Male,	White,	30	Native,	Single,	Machinist,	Pos.
Blood,	1	Male,						Neg.
Blood,	1	Male,	White,	26	Native,	Single,	Clerk,	Neg.
Blood,	1	Male,	White,	26	Native,	Single,	Laborer,	Neg.
Blood,	1	Female,	White,	30	Native,	Married,	Housewife,	Pos.

WASSERMANN TESTS—Continued.

Nature of Specimen.	No. of specimens from this patient.	Sex.	Color.	Age.	Native or Foreign.	Conjugal Condition.	Occupation.	Pos. or Negative.
Blood,	1	Male,	White,	45	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	24	Native,	Single,	Clerk,	Neg.
Blood,	1	Male,	White,	25	Native,	Single,	Telegrapher,	Neg.
Blood,	1	Female,						Neg.
Blood,	1	Female,	White,	51	Native,	Widow,	Housewife,	Pos.
Blood,	1	Male,	White,	26	Native,	Married,	Housewife,	Pos.
Blood,	1	Female,	White,	26	Native,	Single,	Domestic,	Neg.
Blood,	1	Male,	White,	31		Divorced,	Bartender,	Neg.
Blood,	1	Male,	White,	24	Native,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,	33	Native,	Married,	Bookkeeper,	Neg.
Blood,	1	Male,	White,	40	Native,	Married,	Tinner,	Neg.
Blood,	1	Male,		30	Native,	Married,	Clerk,	Neg.
Blood,	1	Male,	White,	27	Native,	Single,	Railroader,	Pos.
Blood,	1	Male,	White,	24	Native,	Single,	Laborer,	Neg.
Blood,	1	Female,	White,	27	Foreign,	Married,	Housewife,	Neg.
Blood,	1	Male,	White,	25	Native,	Single,		Pos.
Blood,	1	Male,	White,		Native,	Single,		Neg.
Blood,	1	Male,	White,	44	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	34	Native,	Married,	Laborer,	Neg.
Blood,	1	Female,	White,	45			Housewife,	Neg.
Blood,	1	Male,	White,	31	Native,	Married,		Neg.
Blood,	1	Male,	White,	41		Married,	Farmer,	Neg.
Blood,	1	Female,	White,	34	Foreign,	Widow,	Housewife,	Neg.
Blood,	1	Male,	White,	36			Salesman,	Neg.
Blood,	1	Female,						Neg.
Blood,	1	Female,	White,	31		Divorced,		Neg.
Blood,	1	Female,	White,	54	Native,	Married,		Neg.
Blood,	1	Female,	White,	36		Married,		Neg.
Blood,	1	Male,	White,	31	Native,	Married,	Salesman,	Neg.
Blood,	1	Female,		28		Married,		Neg.
Blood,	1	Female,	White,	21		Married,	Housework,	Neg.

Blood,	1	Male,	White,	43	Native,	Married,	Laborer,	Neg.
Blood,	1	Female,	White,	56	Native,		Housewife,	Neg.
Blood,	1	Female,	White,	60	Native,	Married,	Housewife,	Neg.
Blood,	1	Male,	White,	48	Native,	Widow,		Pos.
Blood,	1	Male,	White,	30	Native,	Single,		Pos.
Blood,	1	Male,	White,	25	Native,	Single,	Housework,	Neg.
Blood,	1			22	Native,	Single,	Laborer,	Pos.
Blood,	1	Female,	White,	47	Native,	Married,	Housework,	Pos.
Blood,	1	Female,	White,	18	Native,	Single,	Mill girl,	Neg.
Blood,	1	Male,	White,	34	Native,	Single,	Nurse,	Pos.
Blood,	1	Female,	White,	35	Native,	Widow,		Neg.
Blood,	1	Female,	White,		Foreign,	Single,		Neg.
Blood,	1	Male,	White,	34	Native,	Single,		Neg.
Blood,	1	Male,	White,	20	Native,	Single,	Painter,	Neg.
Blood,	1	Male,	White,	25	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	27	Native,	Single,	Clerk,	Pos.
Blood,	1	Male,	White,	23	Native,	Single,	Clerk,	Neg.
Blood,	1	Male,	White,	28	Native,	Married,		Neg.
Blood,	1	Male,	White,		Native,	Single,	Clerk,	Pos.
Blood,	1	Male,	White,	45	Native,	Single,	Machinist,	Neg.
Blood,	1	Male,	White,	19	Native,	Single,		Neg.
Blood,	1	Male,		30		Married,	Salesman,	Neg.
Blood,	1	Female,	White,	59	Foreign,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	40	Native,	Married,	Clerk,	Neg.
Blood,	1	Female,	White,	30	Native,	Single,		Neg.
Blood,	1	Male,	White,	40	Foreign,	Married,		Neg.
Blood,	1	Male,	White,	52		Single,	Tailor,	Neg.
Blood,	1	Male,		23	Native,	Married,	Salesman,	Neg.
Blood,	1							Neg.
Blood,	1	Female,	White,	53	Native,	Married,		Neg.
Blood,	1	Male,	White,	45	Native,	Married,		Neg.
Blood,	1	Female,	White,	62	Native,	Single,	Musician,	Neg.
Blood,	1	Male,	White,	45		Married,		Neg.
Blood,	1	Male,	White,	47	Native,	Married,		Neg.
Blood,	1	Male,	White,	40	Native,	Single,		Neg.
Blood,	1	Male,		40		Single,	Hotel proprietor,	Pos.
Blood,	1	Male,	White,	36	Native,	Single,	Clerk,	Pos.
Blood,	1	Male,		32		Single,	Bartender,	Neg.
Blood,	1	Male,		36		Married,	Laborer,	Neg.
Blood,	1	Male,		48		Married,	Clerk,	Neg.
Blood,	1	Male,		44		Married,	Farmer,	Neg.
Blood,	1	Male,	White,	32		Divorced,	Clerk,	Pos.
Blood,	1	Male,	White,	32		Married,		Neg.
Blood,	1	Male,	White,	28	Native,	Single,	Machinist,	Neg.
Blood,	1	Male,	White,	52	Native,	Married,	Physician,	Neg.
Blood,	1	Male,	White,	32	Foreign,	Married,	Saloon keeper,	Neg.
Blood,	1	Female,	White,	40	Native,	Widow,	Housewife,	Neg.
Blood,	1	Male,	White,				Clerk,	Neg.
Blood,	1	Male,		50	Native,	Married,	Salesman,	Pos.
Blood,	1	Male,		35		Single,	Mechanic,	Neg.

WASSERMANN TESTS—Continued.

Nature of Specimen.	No. of specimens from this patient.	Sex.	Color.	Age.	Native or Foreign.	Conjugal Condition.	Occupation.	Pos. or Negative.
Blood,	1	Male,	White,	40		Single,	Agent,	Neg.
Blood,	1	Male,		40	Foreign,	Married,	Jeweler,	Neg.
Blood,	1	Male,	White,	57	Native,	Married,		Neg.
Blood,	1	Male,	White,	29	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	27	Native,	Single,	Teamster,	Neg.
Blood,	1	Male,	White,		Foreign,	Single,	Confectioner,	Neg.
Blood,	1	Male,	White,	52	Native,	Married,	Conductor,	Neg.
Blood,	1	Male,	White,	30	Native,	Single,	Mechanic,	Neg.
Blood,	1	Male,	White,	46	Native,	Married,	Clerk,	Pos.
Blood,	1	Male,	White,	46	Native,	Married,	Merchant,	Neg.
Blood,	1	Male,	White,	23	Native,	Single,	Pattern maker,	Neg.
Blood,	1	Female,	White,	46	Native,	Married,	Housewife,	Neg.
Blood,	1	Male,	White,	40	Native,	Married,	Agent,	Neg.
Blood,	1	Female,	White,	42	Native,	Single,	Nurse,	Neg.
Blood,	1	Male,	White,	23	Native,	Single,		Neg.
Blood,	1	Female,	White,	23	Native,	Single,	Machinist,	Neg.
Blood,	1	Male,	White,	32		Single,	Conductor,	Neg.
Blood,	1	Male,	White,	33	Native,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,	34	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	28	Native,	Single,	Clerk,	Pos.
Blood,	1	Male,	White,	32	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	27	Native,	Divorced,	Clerk,	Pos.
Blood,	1	Male,	White,	38	Native,	Married,	Engineer,	Neg.
Blood,	1	Male,	White,	22	Native,	Married,	Housewife,	Neg.
Blood,	1	Female,	White,	37	Native,	Married,	Housewife,	Neg.
Blood,	1	Female,	White,	45	Native,	Married,	Housewife,	Neg.
Blood,	1	Female,	Black,	31	Native,	Married,		Neg.
Blood,	1	Male,	White,	35	Native,	Divorced,	Laborer,	Neg.
Blood,	1	Male,	White,	23	Native,	Single,		Neg.
Blood,	1	Male,	White,	27	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	25	Native,	Single,	Laborer,	Neg.

Blood,	1	Male,	White,	67	Native,	Married,		Neg.
Blood,	1	Male,	White,	42	Native,	Married,	Laborer,	Pos.
Blood,	1	Male,	White,	23	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	35	Native,	Single,	Conductor,	Pos.
Blood,	1	Male,	White,	35	Native,	Single,	Conductor,	Pos.
Blood,	1	Male,	White,	23	Native,	Married,	Laborer,	Neg.
Blood,	1	Female,	White,	21	Native,	Single,	Domestic,	Pos.
Blood,	2nd	Female,	White,	21	Native,	Single,	Domestic,	Pos.
Blood,	1	Male,	White,	27	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	21	Native,	Single,	Clerk,	Neg.
Blood,	1	Male,	White,	22	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	20	Native,	Single,	Electrician,	Neg.
Blood,	1	Male,	White,	46	Native,	Married,		Neg.
Blood,	1	Male,	White,	32	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	34	Foreign,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	38	Native,	Married,	Letter carrier,	Pos.
Blood,	1	Male,	White,	23	Native,	Single,		Neg.
Blood,	1	Female,	White,	26	Native,	Single,	Saleswoman,	Neg.
Blood,	1	Male,	White,	42	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	24	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	41	Native,	Married,	Laborer,	Neg.
Blood,	1	Female,	White,	55	Native,	Married,	Housewife,	Neg.
Blood,	1	Male,	White,	45	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	32	Native,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,	45	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	26	Native,	Single,	Blacksmith,	Neg.
Blood,	1	Male,	White,	25	Native,	Single,	Butcher,	Neg.
Blood,	1	Male,	White,	27	Native,	Single,	Blacksmith,	Neg.
Blood,	1	Male,	White,	27	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	56	Native,	Married,	Merchant,	Neg.
Blood,	1	Male,	White,	37	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	29	Native,	Single,	Miner,	Neg.
Blood,	1	Male,	White,	32		Single,	Miner,	Neg.
Blood,	1	Male,	White,	27	Foreign,	Married,	Musician,	Pos.
Blood,	2nd	Male,	White,	27	Native,	Married,	Musician,	Neg.
Blood,	1	Male,	White,	37	Native,	Single,	Policeman,	Neg.
Blood,	1	Male,	White,	33	Native,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,	33	Native,	Single,	Miner,	Neg.
Blood,	1	Male,	White,	26	Native,	Single,	Student,	Neg.
Blood,	1	Male,	White,	34	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	27	Native,	Single,		Neg.
Blood,	1	Male,	White,	26	Native,	Single,	Blacksmith,	Neg.
Blood,	1	Male,	White,	34	Foreign,	Single,	Laborer	Pos.
Blood,	1	Male,	White,	26	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	28	Native,	Single,	Laborer,	Neg.
Blood	1	Male,	White,	25	Native,	Married,		Neg.
Blood,	1	Male,	White,	26	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	30	Foreign,	Married,	Miner,	Neg.
Blood	1	Male,	White,	38	Native,	Married,	Draughtsman,	Neg.
Blood	1	Male,	White,	26	Native,	Single,	Miner,	Neg.

WASSERMANN TESTS—Continued.

Nature of Specimen.	No. of specimens from this patient.	Sex.	Color.	Age.	Native or Foreign.	Conjugal Condition.	Occupation.	Pos. or Negative.
Blood	1	Male,	White,	23	Native,	Single,	Laborer,	Neg.
Blood	1	Male,	White,	33	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	26	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	39	Native,	Single,	Musician,	Neg.
Blood,	1	Female,	White,	20	Native,	Single,	Servant,	Pos.
Blood,	1	Male,	White,	26	Foreign,	Single,	Clerk,	Pos.
Blood,	1	Male,	White,	32	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	31	Native,	Single,	Policeman,	Pos.
Blood,	1	Male,	White,	26	Native,	Single,	Merchant,	Neg.
Blood,	1	Male,	White,	32	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	28	Foreign,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	20	Native,	Single,	Laborer,	Neg.
Blood	1	Male,	White,	35	Native,	Single,	Postman,	Pos.
Blood	1	Male,	White,	26	Native,	Single,	Policeman,	Pos.
Blood,	1	Male,	White,	28	Native,	Single,	Salesman,	Neg.
Blood,	1	Male,	White,	28	Native,	Single,	Salesman,	Neg.
Blood,	1	Male,	White,	29	Native,	Single,		Pos.
Blood,	1	Male,	White,	24	Foreign,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,	22	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	22	Native,	Single,	Miner,	Neg.
Blood,	1	Male,	White,	35	Foreign,	Single,	Miner,	Neg.
Blood,	1	Male,	White,	37	Native,	Single,	Clerk,	Pos.
Blood,	1	Male,	White,	23	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Female,	White,	23	Foreign,	Married,		Pos.
Blood	1	Male,	White,	31	Foreign,	Single,	Laborer,	Pos.
Blood,	1	Female,	White,	25	Native,	Married,	Housework,	Pos.
Blood,	1	Male,	White,	18	Native,	Single,	Student,	Neg.
Blood,	1	Male,	White,	24	Native,	Single,	Clerk,	Neg.
Blood,	1	Female,	White,	10	Native,	Single,		Neg.
Blood,	1	Male,	White,	27	Native,	Single,	Clerk,	Pos.
Blood,	1	Male,	White,	23	Native,	Single,	Painter,	Pos.

Blood,	1	Male,	White,	25	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	23	Native,	Single,	Brakeman,	Neg.
Blood,	1	Male,	White,	40	Native,	Single,		Pos.
Blood,	1	Male,				Single,		Pos.
Blood,	1	Male,						Pos.
Blood,	1	Male,	White,					Pos.
Blood,	1	Male,	White,	30	Native,	Single,	Miner,	Pos.
Blood,	1	Male,	White,	24	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	32	Native,	Married,	Miner,	Neg.
Blood,	1	Male,	White,	20	Native,	Single,	Miner,	Neg.
Blood,	2nd	Male,	White,	20	Native,	Single,	Miner,	Neg.
Blood,		Male,						Neg.
Blood,		Male,						Neg.
Blood,	1	Male,	White,	46	Native,	Married,	Laborer,	Pos.
Blood,	1	Male,	White,	23	Native,	Single,	Miner,	Neg.
Blood,	1			20	Native,	Single,		Pos.
Blood,	1	Female,	White,	38	Native,	Single,		Pos.
Blood,	1	Female,	White,	31	Native,	Married,	Housewife,	Pos.
Blood,	1	Male,	White,	25	Native,	Married,	Machinist,	Pos.
Blood,	1	Female,	White,	19	Native,	Married,	Housework,	Pos.
Blood,	1	Male,	White,	35	Native,	Married,	Laborer,	Neg.
Blood,	1	Female,	White,	38	Native,	Married,	Housekeeper,	Neg.
Blood,	1	Male,	White,	22	Native,	Single,	Chauffeur,	Neg.
Blood,	1	Female,		34	Native,	Married,	Housework,	Neg.
Blood,	1	Female,	White,	53	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	10	Native,	Single,	Student,	Pos.
Blood,	1	Male,	White,	23	Native,	Single,	Student,	Pos.
Blood,	1	Female,	White,	15	Native,	Single,		Neg.
Blood,	1	Female,	White,	11	Native,	Single,		Neg.
Blood,	1	Male,	White,	39	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Female,	White,		Foreign,	Married,	Housewife,	Neg.
Blood,	1	Male,	White,	27	Native,	Single,		Neg
Blood,	1	Male,	White,	35	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	26	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	43	Native,	Married,	Miner,	Neg.
Blood,	1	Male,	White,	26	Foreign,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	26	Foreign,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	48	Native,	Divorced,	Bookkeeper,	Neg.
Blood,	1	Male,	White,	30	Foreign,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	42	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	30	Foreign,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	30	Foreign,	Married,		Neg.
Blood,	1	Male,	White,	21	Foreign,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,	32	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	42	Native,	Married,	Farmer,	Neg.
Blood,	1	Male,	White,	42	Native,		Laborer,	Pos.
Blood,	1	Male,	White,	32	Foreign,	Single,	Tailor,	Neg.
Blood,	1	Male,	White,	30	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,		Native,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,	20	Foreign,	Single,	Laborer,	Neg.

WASSERMANN TESTS—Continued.

Nature of Specimen.	No. of specimens from this patient.	Sex.	Color.	Age.	Native or Foreign.	Conjugal Condition.	Occupation.	Pos. or Negative.
Blood,	1	Male,	White,	24	Native,	Single,	Salesman,	Neg.
Blood,	1	Male,	White,	35	Foreign,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	37	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,			Single,	Laborer,	Neg.
Blood,	1	Male,	White,	21	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	33	Native,	Married,	Livery,	Neg.
Blood,	1	Male,	White,	30	Native,	Married,	Laborer,	Neg.
Blood,	1	Female,	White,	53	Native,	Single,	Teacher,	Neg.
Blood,	1	Male,	White,	35	Native,	Single,	Plumber,	Neg.
Blood,	1	Female,	White,	32	Foreign,	Married,	Housewife,	Pos.
Blood,	1	Male,						Neg.
Blood,	1	Male,	White,	34	Native,	Married,	Plumber,	Pos.
Blood,	1	Male,	White,	26	Native,	Married,	Clerk,	Neg.
Blood,	1	Female,	White,	40	Native,	Widow,		Pos.
Blood,	1	Male,	White,	31	Native,	Single,		Pos.
Blood,	1	Male,	White,	45	Foreign,	Married,	Miner,	Neg.
Blood,	1	Male,	White,	50	Native,	Married,	Miner,	Neg.
Blood,	1	Female,	White,	50	Native,	Married,	Housework,	Pos.
Blood,	1	Male,	White,	41	Foreign,	Married,	Miner,	Neg.
Blood,	1	Male,	White,	29		Married,	Carpenter,	Neg.
Blood,	2nd	Female,	White,	14	Native,	Single,	Housework,	Neg.
Blood,	1	Female,	White,	18	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	42	Foreign,	Married,	Miner,	Neg.
Blood,	1	Male,	White,	23	Native,	Married,	Blacksmith,	Neg.
Blood,	1	Female,	White,	10	Native,	Single,		Neg.
Blood,	1	Male,	White,	43	Foreign,	Married,	Miner,	Neg.
Blood,	1	Male,	White,	26	Native,	Single,		Neg.
Blood,	1	Male,	White,	19		Single,		Neg.
Blood,	1	Male,	White,	26	Native,	Single,		Pos.
Blood,	1	Male,	White,	21	Foreign,			Neg.
Blood,	1	Male,	White,	27	Foreign,	Single,	Tailor,	Pos.

Blood,	1	Male,	White,	28	Foreign,	Single,	Shoemaker,	Neg.
Blood,	1	Male,		23	Foreign,		Salesman,	Neg.
Blood,	1	Female,		54	Foreign,	Married,	Housework,	Pos.
Blood,	1	Male,	White,	32	Foreign,		Merchant,	Neg.
Blood,	1	Male,		24	Foreign,	Single,	Grocer,	Neg.
Blood,	1	Male,	White,	24	Foreign,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,	35	Foreign,	Single,	Merchant,	Pos.
Blood,	1	Male,	White,	31	Foreign,	Married,	Tailor,	Pos.
Blood,	1	Female,	White,	35	Foreign,	Married,		Pos.
Blood,	1	Male,		36	Foreign,	Single,	Laborer,	Pos.
Blood,	1	Male,		52	Foreign,	Married,	Barber,	Neg.
Blood,	1	Male,		67	Foreign,		Agent,	Neg.
Blood,	1	Female,		30		Married,	Housework,	Pos.
Blood,	1	Female,	White,	19		Single,	Tailor,	Neg.
Blood,	1	Female,		25	Foreign,	Married,		Pos.
Blood,	1	Male,	White,	20	Foreign,	Single,		Neg.
Blood,	1	Female,	White,	38	Foreign,	Married,	Housework,	Pos.
Blood,	1	Female,		40	Foreign,	Widow,		Neg.
Blood,	1	Male,		39	Foreign,	Married,	Merchant,	Neg.
Blood,	1	Male,	White,	33	Native,	Single,		Neg.
Blood,	1	Male,	White,	25	Foreign,	Single,	Peddler,	Neg.
Blood,	1	Male,		38	Foreign,	Married,		Neg.
Blood,	1	Female,		24		Married,		Neg.
Blood,	1	Male,	White,	24	Native,	Single,		Neg.
Blood,	1	Male,		29		Single,		Pos.
Blood,	1	Male,	White,	21	Foreign,	Single,	Clerk,	Neg.
Blood,	1	Male,	White,	33	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	24	Foreign,	Single,		Pos.
Blood,	2nd	Male,	White,	24	Foreign,	Married,	Merchant,	Neg.
Blood,	1	Female,		22	Foreign,	Married,	Housework,	Neg.
Blood,	1	Male,		31	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Female,	White,	40	Foreign,	Married,	Housework,	Neg.
Blood,	1	Male,		25	Foreign,	Married,	Huckster,	Neg.
Blood,	1	Male,		26	Foreign,	Single,		Neg.
Blood,	1	Male,		26	Native,	Single,		Neg.
Blood,	1	Female,	White,	28	Foreign,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	36	Foreign,	Married,	Dealer,	Neg.
Blood,	1	Male,		23	Foreign,	Single,	Laborer,	Neg.
Blood,	1	Female,						Neg.
Blood,	1	Female,	White,	54	Foreign,	Married,	Housework,	Pos.
Blood,	2nd	Female,	White,	35	Native,	Widow,		Pos.
Blood,	1	Female,	White,	30	Native,	Married,	Housework,	Neg.
Blood,	2nd	Male,	White,	35	Native,		Laborer,	Neg.
Blood,	1	Male,	White,	24	Native,	Single,	Painter,	Neg.
Blood,	1	Female,	White,	37	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	38	Native,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,	33	Native,	Married,	Bartender,	Pos.
Blood,	1	Male,	White,	31	Native,	Married,	Electrician,	Neg.
Blood,	2nd	Male,	White,	18		Single,	Clerk,	Pos.
Blood,	2nd	Male,		20		Single,		Neg.

WASSERMANN TESTS—Continued.

Nature of Specimen.	No. of specimens from this patient.	Sex.	Color.	Age.	Native or Foreign.	Conjugal Condition.	Occupation.	Pos. or Negative.
Blood,	1	Female,	White,	28	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	32	Native,	Married,	U. S. N.,	Neg.
Blood,	3rd	Male,	White,	32	Native,	Married,	U. S. A.,	Pos.
Blood,	1	Male,	White,	21	Native,	Single,	Clerk,	Neg.
Blood,	1	Female,	White,	17	Native,	Single,	Housework,	Neg.
Blood,	1	Male,	White,	62	Foreign,	Married,	Clerk,	Neg.
Blood,	1	Male,	White,	27	Foreign,	Married,	Tailor,	Pos.
Blood,	1	Male,	White,	24	Foreign,	Single,	Tailor,	Neg.
Blood,	1	Male,	White,	32	Native,	Single,	Miner,	Neg.
Blood,	1	Male,	White,	72	Native,	Married,	Farmer,	Neg.
Blood,	1	Female,	White,	30	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	55	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	40	Native,	Single,	Farmer,	Neg.
Blood,	1	Female,	White,	21	Native,	Single,	Factory girl,	Pos.
Blood,	1	Male,	White,	30	Native,	Married,	Laborer,	Pos.
Blood,	1	Male,	White,	39	Native,	Married,	Engineer,	Neg.
Blood,	1	Male,	White,	26	Native,	Single,	Laborer,	Pos.
Blood,	1	Female,	White,	37	Native,	Married,	Housework,	Neg.
Blood,	1	Female,	Black,	24	Native,	Married,	Housework,	Pos.
Blood,	1	Male,	White,	35	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	37	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	56	Native,	Widower,	Laborer,	Neg.
Blood,	1	Male,	Black,	30	Foreign,	Single,	Laborer,	Pos.
Blood,	1	Female,	White,	30	Foreign,	Married,	Housewife,	Pos.
Blood,	1	Male,	White,	40	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	52	Foreign,	Married,	Miner,	Neg.
Blood,	1	Male,	White,	44	Foreign,	Married,		Neg.
Blood,	1	Male,	White,	27	Foreign,	Single,	Miner,	Neg.
Blood,	1	Male,	White,	36	Native,	Single,	Engineer,	Neg.
Blood,	1	Female,	White,	24	Native,	Married,	Housewife,	Neg.
Blood,	1	Male,	White,	37	Native,	Married,	Bookkeeper,	Neg.

Blood,	1	Male,	White,	46	Foreign,	Married,	Miner,	Neg.
Blood,	1	Male,	White,	39	Foreign,	Married,	Miner,	Neg.
Blood,	1	Female,		34	Native,	Divorced,	Clerk,	Pos.
Blood,	1	Male,	White,	40	Native,	Married,	Clerk,	Neg.
Blood,	1	Male,	White,	41	Foreign,	Single,	Laborer,	Pos.
Blood,	1	Male,		35	Native,	Married,	Clerk,	Pos.
Blood,	1	Male,	White,	46	Native,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,	53	Native,	Widower,		Pos.
Blood,	1	Male,	White,	31	Native,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,	66	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	21	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,		30	Native,	Single,	Clerk,	Pos.
Blood,	1	Male,	White,	47	Native,	Married,	Clerk,	Neg.
Blood,	1	Male,	White,	18	Native,	Single,	School boy,	Pos.
Blood,	1	Female,	White,	20	Native,	Single,	Clerk,	Neg.
Blood,	1	Male,	White,	21	Native,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,	35		Single,	Clerk,	Neg.
Blood,	1	Female,	White,	50	Native,	Single,	Housekeeper,	Neg.
Blood,	1	Male,	White,	36		Married,	Laborer,	Neg.
Blood,	1	Male,	White,	38	Native,	Married,	Laborer,	Pos.
Blood,	1	Male,	White,	39	Native,	Widower,		Neg.
Blood,	1	Male,	White,	34	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	30	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	26	Native,	Married,	Clerk,	Neg.
Blood,	1	Male,	White,	41	Native,	Single,	Laborer,	Pos.
Blood,	1	Female,	White,	29		Divorced,	Seamstress,	Neg.
Blood,	1	Male,	White,	35	Foreign,	Married,	Clerk,	Pos.
Blood,	1	Male,	White,	27	Native,	Single,	Machinist,	Pos.
Blood,	1	Male,	White,	32	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	60	Native,	Married,		Neg.
Blood,	1	Male,	White,	23	Native,	Single,	Salesman,	Neg.
Blood,	1	Female,	White,		Native,	Married,		Neg.
Blood,	1	Male,	White,	47		Married,	Agent,	Pos.
Blood,	1	Male,	White,	48	Native,	Married,	Salesman,	Pos.
Blood,	1	Female,	Black,	35	Native,	Single,	Nurse,	Neg.
Blood,	1	Male,	White,	51	Native,	Married,	Clerk,	Neg.
Blood,	1	Male,	White,	40		Single,	Bartender,	Neg.
Blood,	1	Male,	White,	64	Native,	Divorced,		Pos.
Blood,	1	Male,	White,	40	Native,	Married,	Laborer,	Pos.
Blood,	1	Male,	White,	41	Native,	Married,	Laborer,	Pos.
Blood,	1	Male,	White,	40	Native,	Married,		Neg.
Blood,	1	Male,	White,	45	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	52	Foreign,	Single,	Miner,	Neg.
Blood,	1	Male,	White,	35	Native,	Single,	Salesman,	Pos.
Blood,	1	Male,	White,	27	Native,	Single,	Machinist,	Pos.
Blood,	1	Male,	White,	32	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	60	Native,	Married,		Neg.
Blood,	1	Male,	White,	23	Native,	Single,	Salesman,	Neg.
Blood,	1	Female,	White,			Married,		Neg.
Blood,	1	Male,	White,	47		Married,	Agent,	Pos.

WASSERMANN TESTS—Continued.

Nature of Specimen.	No. of specimens from this patient.	Sex.	Color.	Age.	Native or Foreign.	Conjugal Condition.	Occupation.	Pos. or Negative.
Blood,	1	Male,	White,	48	Native,	Married,	Salesman,	Pos.
Blood,	1	Female,	Black,	35	Native,	Single,	Nurse,	Neg.
Blood,	1	Male,	White,	51	Native,	Married,	Clerk,	Neg.
Blood,	1	Male,	White,	40		Single,	Bartender,	Neg.
Blood,	1	Male,	White,	64	Native,	Divorced,		Pos.
Blood,	1	Male,	White,	40	Native,	Married,	Laborer,	Pos.
Blood,	1	Male,	White,	41	Native,	Married,	Laborer,	Pos.
Blood,	1	Male,	White,	40	Native,	Married,		Neg.
Blood,	1	Male,	White,	45	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	52	Foreign,	Single,	Miner,	Neg.
Blood,	1	Male,	White,	35	Native,	Single,	Salesman,	Pos.
Blood,	1	Male,	White,	35	Native,	Single,	Engineer,	Neg.
Blood,	1	Male,	White,	40	Native,	Single,	Inspector,	Neg.
Blood,	1	Male,	White,	35	Foreign,	Married,	Inspector,	Neg.
Blood,	1	Male,	White,	35			Clerk,	Neg.
Blood,	1	Male,	White,	40	Native,	Married,	Salesman,	Pos.
Blood,	1	Male,	White,	35	Native,	Single,	Salesman,	Neg.
Blood,	1	Male,	White,	28	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	29	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	58	Native,	Single,	Watchman,	Neg.
Blood,	1	Male,	White,	39	Native,	Single,		Neg.
Blood,	1	Male,	White,	30	Native,	Single,	Clerk,	Neg.
Blood,	1	Male,	White,	40	Native,	Married,		Pos.
Blood,	1	Male,	White,	32	Native,	Single,	Clerk,	Neg.
Blood,	1	Male,	White,	35	Native,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,	34	Native,	Married,	Laborer,	Pos.
Blood,	1	Male,	White,	44	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	40	Native,	Married,	Laborer,	Pos.
Blood,	1	Female,	White,	18	Native,			Neg.
Blood,	1	Male,	White,	43	Native,		Laborer,	Neg.
Blood,	1	Male,	White,	43	Native,		Laborer,	Neg.

Blood,	1	Female,	White,	27	Native,	Married,	Housewife,	Pos.
Blood,	1	Female,	White,	30	Native,	Married,	Housewife,	Neg.
Blood,	1	Female,	White,	28	Native,	Single,	Housekeeper,	Neg.
Blood,	1	Male,	White,	18	Native,	Single,	Laborer,	Neg.
Blood,	1	Female,	White,	29	Native,	Married,	Housewife,	Pos.
Blood,	1	Male,	White,	28	Native,	Widower,	Clerk,	Pos.
Blood,	1	Male,	White,	42	Native,	Married,	Constable,	Pos.
Blood,	1	Male,	White,		Foreign,	Single,	Salesman,	Pos.
Blood,	1	Male,	White,	36	Native,	Married,	Housework,	Pos.
Blood,	1	Male,	White,	38	Native,	Single,		Neg.
Blood,	1	Female,	White,		Native,	Single,	Housework,	Pos.
Blood,	1	Female,	White,	32	Native,	Single,	Saleswoman,	Neg.
Blood,	1	Female,	White,	29	Native,	Single,	Housewife,	Pos.
Blood,	1	Male,	White,		Native,	Married,		Neg.
Blood,	1	Male,	White,	52	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	26	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	28	Foreign,	Single,	Miner,	Neg.
Blood,	1	Male,	White,	27	Native,	Married,	Carpenter,	Neg.
Blood,	1	Male,	White,	24	Native,	Married,	Laborer,	Pos.
Blood,	1	Female,	White,	35	Native,	Married,	Laborer,	Neg.
Blood,	1	Female,	White,	36	Foreign,	Married,	Housewife,	Neg.
Blood,	1	Female,	White,	20	Native,	Single,		Pos.
Blood,	1	Female,	White,	30	Native,	Widow,	Housewife,	Neg.
Blood,	1	Male,	White,	45	Native,	Married,	Machinist,	Neg.
Blood,	1	Male,	White,	20	Native,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,	30	Native,	Single,	Laborer,	Pos.
Blood,	1	Female,	White,		Native,	Married,		Pos.
Blood,	1	Female,	White,	24	Native,	Married,		Pos.
Blood,	1	Female,	White,	21	Native,	Single,		Pos.
Blood,	1	Male,	White,	22	Native,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,		Native,	Married,	Teamster,	Pos.
Blood,	1	Male,	White,	37	Native,	Married,	Miner,	Neg.
Blood,	1	Male,	White,		Native,	Single,	Bartender,	Neg.
Blood,	1	Male,	White,	29	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	37	Native,	Married,		Neg.
Blood,	1	Male,	White,	35	Foreign,	Married,	Laborer,	Pos.
Blood,	1	Female,	White,	51	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	36	Native,	Married,	Trimmer,	Neg.
Blood,	1	Female,	White,	35	Native,	Single,		Neg.
Blood,	1	Female,	White,	36	Native,	Married,	Housewife,	Neg.
Blood,	1	Male,	White,	46	Native,	Married,	Clergyman,	Neg.
Blood,	1	Female,	White,	31	Native,	Married,		Neg.
Blood,	1	Male,	White,	39	Native,	Married,		Neg.
Blood,	1	Male,	White,					Pos.
Blood,	1	Male,	White,	45	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	30	Native,	Married,	Conductor,	Pos.
Blood,	1	Male,	White,	33	Foreign,	Married,	Laborer,	Pos.
Blood,	1	Male,	White,	33	Native,		Salesman,	Neg.
Blood,	1	Female,	White,	23	Native,	Married,	Housewife,	Neg.
Blood,	1	Female,	White,	56	Native,	Married,	Housewife,	Neg.

WASSERMANN TESTS—Continued.

Nature of Specimen.	No. of specimens from this patient.	Sex.	Color.	Age.	Native or Foreign.	Conjugal Condition.	Occupation.	Pos. or Negative.
Blood,	1	Male,	White,	22	Native,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,	22	Foreign,	Single,	Miner,	Neg.
Blood,	1	Female,	White,	27	Foreign,	Widow,		Neg.
Blood,	1	Male,	White,	51	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,		Native,	Married,		Pos.
Blood,	1	Male,	White,	21	Foreign,	Single,	Miner,	Neg.
Blood,	1	Male,	White,	23	Native,	Married,		Neg.
Blood,	1	Male,	White,	27	Native,	Married,	Engineer,	Neg.
Blood,	1	Female,	White,	28	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,		Foreign,	Single,	Cook,	Neg.
Blood,	1	Male,	White,	28	Native,	Married,	Clerk,	Pos.
Blood,	1	Male,	White,	28	Native,	Single,		Pos.
Blood,	1	Female,	White,	30	Native,	Single,	Housework,	Pos.
Blood,	1	Male,	White,	25	Native,	Married,	Agent,	Pos.
Blood,	1	Male,	White,	40	Native,	Married,	Mason,	Neg.
Blood,	1	Male,	White,	23	Native,	Single,	Clerk,	Neg.
Blood,	1	Male,	White,	22	Native,	Single,	Barber,	Pos.
Blood,	1	Male,	White,	30	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	27	Native,	Single,	Clerk,	Neg.
Blood,	1	Male,	White,	56	Foreign,	Married,	Merchant,	Neg.
Blood,	1	Male,	White,	24	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	28	Native,	Married,	Clerk,	Neg.
Blood,	1	Male,	White,	25	Native,	Married,	Clerk,	Neg.
Blood,	1	Female,	White,	28	Native,	Married,	Housewife,	Neg.
Blood,	1	Male,	White,	35	Native,	Married,	Laborer,	Pos.
Blood,	1	Male,	White,	50	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	51	Native,	Married,	Laborer,	Pos.
Blood,	1	Female,	White,	34	Native,	Married,	Housewife,	Neg.
Blood,	1	Male,	White,	40	Native,	Married,	Railroader,	Neg.
Blood,	1	Male,	White,	20	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	39	Native,	Single,	Clerk,	Pos.

Blood,	1	Male,	White,		33	Foreign,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,		21	Native,	Single,	Inspector,	Pos.
Blood,	1	Female,	White,		34	Foreign,	Married,	Housewife,	Neg.
Blood,	1	Male,	White,		42	Native,	Single,		Neg.
Blood,	1	Female,	White,		36	Native,	Married,	Housework,	Pos.
Blood,	1	Female,	White,		24	Native,	Single,	Teacher,	Neg.
Blood,	2nd	Female,	White,		24	Native,	Single,	Teacher,	Neg.
Blood,	1	Male,	White,		32	Foreign,	Married,	Miner,	Pos.
Blood,	1	Male,	White,		28	Native,	Single,	Agent,	Neg.
Blood,	1	Male,	White,		20	Native,	Single,	Clerk,	Pos.
Blood,	1	Male,	White,		20	Native,	Single,	Clerk,	Pos.
Blood,	1	Female,	White,		30	Native,	Widow,		Pos.
Blood,	1	Male,	White,		28	Native,	Divorced,		Neg.
Blood,	1	Female,	White,		39	Native,	Married,	Housewife,	Neg.
Blood,	1	Male,	White,		56	Native,	Single,	Farmer,	Neg.
Blood,	1	Male,	White,		25	Native,	Single,	Clerk,	Neg.
Blood,	1	Male,	White,		19	Native,	Single,	Laborer,	Neg.
Blood,	1	Female,	White,		25	Foreign,	Married,	Housewife,	Neg.
Blood,	1	Male,	White,		32	Native,	Married,	Miner,	Pos.
Blood,	1	Male,	White,		33	Foreign,	Married,	Laborer,	Pos.
Blood,	1	Female,	White,		27	Native,	Married,	Housewife,	Pos.
Blood,	1	Female,	White,		21	Native,	Single,	Clerk,	Pos.
Blood,	1	Male,	White,		31	Native,	Married,	Laborer,	Pos.
Blood,	1	Male,	White,		32	Native,	Single,	Clerk,	Neg.
Blood,	1	Male,	White,		23	Native,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,		33	Native,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,		33	Native,	Married,	Laborer,	Pos.
Blood,	1	Male,	White,		38	Native,	Married,	Draughtsman,	Pos.
Blood,	1	Male,	White,		38	Native,	Widower,		Pos.
Blood,	1	Male,	White,		38	Native,	Single,	Clerk,	Pos.
Blood,	1	Male,	White,		21	Native,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,		26		Single,		Neg.
Blood,	1	Male,	White,		7	Native,	Single,		Neg.
Blood,	1	Female,	White,		46		Married,	Housework,	Neg.
Blood,	1	Female,	White,		52	Native,	Single,		Neg.
Blood,	1	Female,	White,		28	Native,	Divorced,	Housework,	Neg.
Blood,	1	Female,	White,		58	Native,	Married,	Housework,	Neg.
Blood,	1	Female,	White,		54	Native,	Widow,	Housework,	Neg.
Blood,	1	Female,	White,		27		Single,	Clerk,	Neg.
Blood,	1	Female,	White,		39	Native,	Married,	Housework,	Neg.
Blood,	1	Female,	White,		40	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,		42	Native,	Married,	Cigar maker,	Pos.
Blood,	1	Male,	White,		42	Native,	Married,	Farmer,	Neg.
Blood,	1	Male,	White,		23	Native,	Single,		Pos.
Blood,	1	Female,	White,		60	Native,	Married,	Housekeeper,	Neg.
Blood,	1	Female,	White,		20	Native,	Single,		Neg.
Blood,	1	Female,	White,		30	Foreign,	Married,	Housewife,	Neg.
Blood,	1	Male,	White,		41	Native,	Married,	Laborer,	Pos.
Blood,	1	Male,	White,			Native,	Married,	Salesman,	Pos.
Blood,	1	Female,	Black,		40	Native,	Widow,	Housewife,	Pos.

WASSERMANN TESTS—Continued.

Nature of Specimen.	No. of specimens from this patient.	Sex.	Color.	Age.	Native or Foreign.	Conjugal Condition.	Occupation.	Pos. or Negative.
Blood,	1	Male,	White,	50	Native,	Married,	Miner,	Pos.
Blood,	1	Female,	White,	19	Native,	Single,		Pos.
Blood,	1	Male,	White,		Native,	Single,	Clerk,	Neg.
Blood,	1	Male,	White,	26	Foreign,	Married,	Weaver,	Neg.
Blood,	1	Male,	White,	34	Native,	Single,	Waiter,	Neg.
Blood,	1	Female,	White,	21	Foreign,	Single,	Housework,	Neg.
Blood,	1	Male,	Black,	34	Native,	Married,	Laborer,	Pos.
Blood,	1	Male,	White,	28	Foreign,	Married,	Presser,	Pos.
Blood,	2nd	Male,	White,	28	Foreign,	Married,		Pos.
Blood,	1	Male,	White,	22	Foreign,	Single,	Mill hand,	Neg.
Blood,	1	Female,	White,	24	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	30	Foreign,	Married,	Cleaner,	Pos.
Blood,	1	Male,	Black,	27	Native,	Married,	Bootblack,	Neg.
Blood,	1	Male,	Black,	16	Native,	Single,	Laborer,	Neg.
Blood,	1	Female,	White,			Widow,	Housework,	Pos.
Blood,	1	Male,	White,	45	Foreign,	Married,	Sailor,	Neg.
Blood,	1	Male,	White,	54	Foreign,	Married,	Sailor,	Neg.
Blood,	1	Male,	White,	49	Foreign,	Married,	Barber,	Neg.
Blood,	1	Female,	White,	12	Foreign,	Single,		Neg.
Blood,	1	Female,	White,	37	Foreign,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	16	Foreign,	Single,	Messenger,	Neg.
Blood,	1	Female,	White,	41	Foreign,	Married,		Neg.
Blood,	1	Female,	Black,	26	Native,	Married,	Housework,	Neg.
Blood,	1	Female,	White,		Foreign,	Divorced,	Housework,	Neg.
Blood,	1	Male,	Black,	29	Native,	Married,	Driver,	Neg.
Blood,	1	Male,	White,	26	Native,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,	30	Native,	Widower,	Clerk,	Neg.
Blood,	1	Female,	White,	12	Native,	Single,		Neg.
Blood,	1	Male,	White,	38	Native,	Married,	Laborer,	Neg.
Blood,	1	Female,	White,	44	Native,	Widow,	Housework,	Neg.
Blood,	1	Female,	White,	39	Foreign,	Married,	Housework,	Neg.

Blood,	1	Female,	White,	26	Foreign,	Married,	Housework,	Pos.
Blood,	1	Male,	White,	34	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	19	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	Black,	26	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	30	Foreign,	Single,	Waiter,	Pos.
Blood,	1	Female,	White,	30	Native,	Divorced,	Housework,	Neg.
Blood,	1	Male,	White,	37	Native,	Married,	Printer,	Neg.
Blood,	1	Male,	White,	35	Native,	Single,	Carpenter,	Neg.
Blood,	1	Male,	White,	69	Native,	Single,	Clerk,	Neg.
Blood,	1	Female,	White,	15	Native,	Single,		Pos.
Blood,	1	Male,	White,	7		Single,		Pos.
Blood,	1	Male,	White,	38	Native,	Married,	Miner,	Neg.
Blood,	1	Male,	White,	22	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,			Married,	Engineer,	Neg.
Blood,	1	Male,	White,	28	Native,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,	24	Native,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,	26	Native,	Married,	Porter,	Pos.
Blood,	1	Female,	White,	30	Native,	Married,	Housework,	Neg.
Blood,	1	Female,	White,	19	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	30	Native,	Widower,		Neg.
Blood,	1	Female,	White,		Native,	Married,		Neg.
Blood,	1	Male,	White,	20	Native,	Single,		Neg.
Blood,	1	Male,	White,	50	Foreign,	Married,	Miner,	Pos.
Blood,	1	Female,	White,	44	Native,	Widow,		Pos.
Blood,	1	Female,	White,	50	Native,	Married,		Neg.
Blood,	1	Male,	White,	32	Native,	Married,		Pos.
Blood,	1	Male,	White,	32	Native,	Married,	Engineer,	Pos.
Blood,	1	Male,	White,	24	Native,	Single,		Neg.
Blood,	1	Male,	White,	56	Native,	Married,	Minister,	Pos.
Blood,	1	Male,	White,	27	Foreign,	Single,	Laborer,	Neg.
Blood,	1	Female,	White,	40	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	55	Native,	Married,		Neg.
Blood,	1	Female,	White,	41	Native,	Married,	Housework,	Neg.
Blood,	1	Female,	White,	55	Native,	Widow,		Neg.
Blood,	1	Male,	White,	21		Single,	Machinist,	Neg.
Blood,	1	Female,	White,	22		Single,	Maid,	Neg.
Blood,	1	Female,	White,	42	Native,	Widow,	Labor,	Pos.
Blood,	1	Male,	White,	21	Native,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,	32		Married,	Salesman,	Pos.
Blood,	1	Male,	White,	45	Native,	Single,	Laborer,	Neg.
Blood,	1	Female,	White,	45	Native,	Married,		Pos.
Blood,	1	Female,	White,	42	Foreign,	Married,		Neg.
Blood,	1	Female,	White,	32	Native,	Married,		Pos.
Blood,	1	Female,	White,	50	Native,	Married,		Neg.
Blood,	1	Female,	White,	28	Native,	Married,		Pos.
Blood,	1	Female,	White,	51	Native,	Married,	Farmer,	Neg.
Blood,	1	Male,	White,	16	Native,	Single,		Neg.
Blood,	1	Male,	White,	26	Native,	Married,	Farmer,	Pos.
Blood,	1	Male,	White,	48	Native,	Widower,		Pos.
Blood,	1	Female,	White,	27	Native,	Single,	Bookkeeper,	Neg.

WASSERMANN TESTS—Continued.

Nature of Specimen.	No. of specimens from this patient.	Sex.	Color.	Age.	Native or Foreign.	Conjugal Condition.	Occupation.	Pos. or Negative.
Blood,	1	Male,	White,	62	Foreign,	Married,	Laborer,	Pos.
Blood,	1	Male,	White,	24	Native,	Married,	Salesman,	Pos.
Blood,	1	Male,	White,	55	Native,	Single,	Machinist,	Neg.
Blood,	1	Female,	White,	38	Native,	Married,		Neg.
Blood,	1	Female,	White,	39	Native,	Married,	Teacher,	Neg.
Blood,	1	Male,	White,	27	Native,	Married,	Machinist,	Neg.
Blood,	1	Male,	White,	28	Native,	Single,	Laborer,	Neg.
Blood,	1	Female,	White,	8	Native,	Single,		Pos.
Blood,	1	Male,	White,	39	Native,	Married,	Brakeman,	Neg.
Blood,	1	Female,	White,	42	Native,	Married,		Neg.
Blood,	1	Male,	White,	36	Native,	Married,	Railroader,	Neg.
Blood,	1	Female,	White,	26	Native,	Single,		Pos.
Blood,	1	Male,	White,	21	Native,	Single,		Neg.
Blood,	1	Male,	White,	23	Native,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,	9	Native,	Single,		Neg.
Blood,	1	Male,	White,	23	Native,	Single,	Laborer,	Pos.
Blood,	1	Female,	White,	23	Native,	Single,	Domestic,	Neg.
Blood,	1	Female,	White,	41	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	55	Foreign,	Single,		Neg.
Blood,	1	Female,	White,	47	Native,	Single,	Housework,	Neg.
Blood,	1	Male,	White,	29	Native,	Single,	Moulder,	Neg.
Blood,	1	Male,	White,	40	Native,	Married,	Salesman,	Neg.
Blood,	1	Male,	White,	40	Native,	Married,	Physician,	Neg.
Blood,	1	Male,	White,	26	Native,	Single,		Neg.
Blood,	1	Male,	White,	54	Native,	Married,	Laborer,	Pos.
Blood,	1	Male,	White,	46	Native,	Married,	Laborer,	Pos.
Blood,	1	Male,	White,	35	Foreign,	Married,	Laborer,	Pos.
Blood,	1	Male,	White,	44	Native,	Married,	Miner,	Neg.
Blood,	1	Male,	White,	48	Native,	Married,	Railroader,	Neg.
Blood,	1	Male,	White,	58	Foreign,	Single,		Neg.
Blood,	1	Female,	White,	50	Native,	Married,	Housework,	Neg.

Blood,	1	Male,	White,	29	Native,	Single,		Neg.
Blood,	1	Male,	White,	20	Native,	Single,		Neg.
Blood,	1	Female,	White,	46	Native,	Married,	Cook,	Neg.
Blood,	1	Male,	White,	40	Foreign,	Married,		Pos.
Blood,	1	Male,	White,	34	Foreign,	Single,	Laborer,	Neg.
Blood,	1	Female,	White,	18	Native,	Single,	Clerk,	Neg.
Blood,	1	Male,	White,	41	Foreign,	Married,		Pos.
Blood,	1	Female,	White,	42	Native,	Married,	Housework,	Pos.
Blood,	1	Male,	White,	40	Native,	Married,	Machinist,	Neg.
Blood,	1	Male,	White,	29	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	38	Native,	Married,	Clerk,	Neg.
Blood,	1	Male,	White,	25	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	33	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	32	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	29	Native,	Married,	Electrician,	Pos.
Blood,	1	Female,	White,	27	Native,	Married,	Housework,	Pos.
Blood,	1	Female,	White,	18	Foreign,	Single,	Housework,	Neg.
Blood,	1	Male,	White,	51	Native,	Married,	Miner,	Neg.
Blood,	1	Male,	White,	51	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	28	Foreign,	Single,	Miner,	Neg.
Blood,	1	Male,	White,		Native,	Married,	Bartender,	Neg.
Blood,	1	Male,	White,	49	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Female,	White,	30	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	42	Native,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,	28	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	36	Native,	Married,	Clerk,	Neg.
Blood,	1	Male,	White,	53	Native,	Married,	Clerk,	Neg.
Blood,	1	Female,	White,	35	Native,	Married,	Housework,	Neg.
Blood,	1	Female,	White,	35	Foreign,	Married,	Housework,	Neg.
Blood,	1	Female,	White,	47	Foreign,	Married,	Miner,	Neg.
Blood,	1	Male,	White,	45	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	40	Foreign,	Married,	Clerk,	Pos.
Blood,	1	Male,	White,	25	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	54	Foreign,	Single,	Clerk,	Neg.
Blood,	1	Male,	White,	48	Foreign,	Married,	Miner,	Neg.
Blood,	1	Male,	White,	27	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	30	Foreign,	Married,	Miner,	Neg.
Blood,	1	Male,	White,	42	Native,	Widower,	Laborer,	Neg.
Blood,	4th	Male,	White,	42	Native,		Laborer,	Neg.
Blood,	1	Male,	White,	41	Native,	Widower,	Laborer,	Pos.
Blood,	3rd	Female,	White,	42	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	36	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	45	Native,	Married,	Clerk,	Neg.
Blood,	1	Male,	White,	28	Native,	Single,	Engineer,	Neg.
Blood,	1	Male,	White,	37	Foreign,	Married,	Miner,	Neg.
Blood,	1	Female,	White,	20	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	36	Foreign,	Married,	Miner,	Neg.
Blood,	1	Male,	White,	36	Foreign,	Married,	Miner,	Neg.
Blood,	1	Female,	White,	27	Native,	Married,	Housework,	Neg.
Blood,	1	Female,	White,	28	Foreign,	Married,	Housework,	Neg.

WASSERMANN TESTS—Continued.

Nature of Specimen.	No. of specimens from this patient.	Sex.	Color.	Age.	Native or Foreign.	Conjugal Condition.	Occupation.	Pos. or Negative.
Blood,	1	Male,		34	Native,	Single,		Neg.
Blood,	1	Female,	White,	21	Foreign,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	48	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Female,	White,	36	Foreign,	Widow,	Housework,	Neg.
Blood,	1	Male,	White,	51	Foreign,	Married,	Presser,	Neg.
Blood,	1	Male,	White,	28	Foreign,	Married,	Miner,	Neg.
Blood,	1	Female,	White,	9	Native,	Single,		Neg.
Blood,	1	Male,	White,	32	Foreign,	Single,		Neg.
Blood,	1	Male,	White,	28	Foreign,	Married,	Laborer,	Pos.
Blood,	1	Male,	White,	38	Foreign,	Married,	Miner,	Neg.
Blood,	1	Male,	White,	42	Foreign,	Married,	Miner,	Neg.
Blood,	1	Male,	White,	28	Native,	Married,	Painter,	Neg.
Blood,	1	Male,	White,	55	Foreign,	Married,	Tailor,	Neg.
Blood,	1	Female,	White,	50	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	38	Native,	Married,	Clerk,	Neg.
Blood,	1	Male,	White,	56	Foreign,	Married,		Neg.
Blood,	1	Male,	White,	28	Foreign,	Married,	Barber,	Neg.
Blood,	1	Male,	White,	52	Foreign,	Married,	Tailor,	Neg.
Blood,	1	Female,	White,	51	Foreign,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	36	Native,	Married,	Engineer,	Pos.
Blood,	1	Male,	White,	36	Native,	Married,	Miner,	Pos.
Blood,	1	Male,	White,	42	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	27	Native,	Divorced,	Clerk,	Pos.
Blood,	1	Female,	White,	56	Native,	Widow,	Housework,	Neg.
Blood,	1	Female,	White,	50	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	21	Foreign,	Single,	Laborer,	Neg.
Blood,	1	Female,	White,	32	Native,	Married,	Housework,	Pos.
Blood,	1	Female,	White,		Native,	Single,	Teacher,	Neg.
Blood,	1	Male,	White,		Foreign,	Married,	Miner,	Neg.
Blood,	1	Female,						Neg.
Blood,	1	Male,	White,	23	Foreign,	Single,	Laborer,	Neg.

Blood,	1	Male,	White,	23	Native,	Single,	Mechanic,	Pos.
Blood,	1	Male,	White,	30	Foreign,	Married,	Gardener,	Neg.
Blood,	1	Male,	White,	20	Native,	Single,	Mill worker,	Neg.
Blood,	1	Male,	White,	26	Native,	Single,		Neg.
Blood,	1	Male,	White,	26	Native,	Single,	Clerk,	Neg.
Blood,	1	Male,	White,	25	Native,	Single,	Conductor,	Neg.
Blood,	1	Male,	White,	22	Native,	Single,		Neg.
Blood,	1	Male,	White,	38	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	30	Native,	Single,	Telegrapher,	Neg.
Blood,	1	Male,	White,	19	Native,	Single,	Clerk,	Neg.
Blood,	1	Male,	White,	32	Native,	Single,	Telegrapher,	Neg.
Blood,	1	Male,	White,	30	Native,	Single,	Laborer,	Pos.
Blood,	1	Male,						Neg.
Blood,	1	Female,	White,	32	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	63	Native,	Widower,	Laborer,	Neg.
Blood,	1	Male,	White,	34	Native,	Married,	Salesman,	Pos.
Blood,	1	Male,	White,	27	Foreign,	Single,	Laborer,	Pos.
Blood,	1	Female,	White,	22	Foreign,	Single,		Neg.
Blood,	1	Female,	White,	25	Foreign,	Married,	Housework,	Pos.
Blood,	1	Male,	White,	52	Native,	Married,	Musician,	Pos.
Blood,	1	Male,	White,	32	Foreign,	Single,	Laborer,	Neg.
Blood,	1	Female,		25	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	32	Foreign,	Single,		Neg.
Blood,	1	Male,	White,	25	Native,	Married,	Laborer,	Neg.
Blood,	1	Female,		31	Foreign,	Married,	Laborer,	Pos.
Blood,	1	Female,	White,	26	Foreign,	Married,		Pos.
Blood,	1	Female,	White,	21	Foreign,	Married,	Housework,	Neg.
Blood,	1	Female,	White,	19	Foreign,	Married,	Housework,	Neg.
Blood,	1	Female,	White,	18		Single,	Mill hand,	Neg.
Blood,	1	Male,	White,	22		Single,	Miner,	Neg.
Blood,	1	Male,	White,	26		Single,	Driver,	Pos.
Blood,	1	Female,	White,		Foreign,	Married,	Bartender,	Pos.
Blood,	1	Male,	White,	20	Native,	Single,	Clerk,	Neg.
Blood,	1	Male,	White,	29	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	40	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	27	Native,	Single,	Laborer,	Neg.
Blood,	1	Female,	White,	42	Native,	Married,	Housework,	Pos.
Blood,	1	Female,	White,	35	Native,	Married,	Housework,	Neg.
Blood,	1	Female,	White,	37	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	43	Native,	Married,		Neg.
Blood,	1	Female,	White,	18	Native,	Single,		Neg.
Blood,	1	Male,	White,	23	Native,	Single,		Neg.
Blood,	1	Female,	White,	39	Native,	Married,	Housework,	Pos.
Blood,	1	Male,	White,	32	Native,	Married,		Pos.
Blood,	1	Female,	White,	23	Native,	Single,	Housework,	Pos.
Blood,	1	Male,	Black,	35	Native,	Single,	Coachman,	Pos.
Blood,	1	Female,	White,	34	Native,	Married,		Neg.
Blood,	1	Female,	White,	19	Native,	Single,		Pos.
Blood,	1	Female,	White,	68	Native,	Widow,		Neg.
Blood,	1	Male,	White,	25	Native,	Married,		Neg.

WASSERMANN TESTS—Continued.

Nature of Specimen.	No. of specimens from this patient.	Sex.	Color.	Age.	Native or Foreign.	Conjugal Condition.	Occupation.	Pos. or Negative.
Blood,	1	Male,	White,	34	Native,	Married,		Neg.
Blood,	1	Female,	White,	40	Native,	Married,	Housework,	Neg.
Blood,	1	Female,	White,	30	Native,	Single,		Neg.
Blood,	1	Male,	White,	24	Foreign,	Single,		Pos.
Blood,	1	Female,	Black,	60	Native,	Widow,	Housework,	Neg.
Blood,	1	Male,	White,	26	Native,	Single,		Neg.
Blood,	1	Female,	White,	52		Married,		Neg.
Blood,	1	Male,	White,	49	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	40	Native,	Married,		Neg.
Blood,	1	Female,	White,	55	Native,	Widow,		Neg.
Blood,	1	Male,	White,	47	Native,	Married,	Engineer,	Neg.
Blood,	1	Male,	White,	42	Native,	Married,		Neg.
Blood,	1	Female,	Black,	34	Native,	Single,	Housework,	Neg.
Blood,	1	Female,	Black,	23	Native,	Single,		Neg.
Blood,	1	Male,	White,	28	Native,	Single,	Reporter,	Pos.
Blood,	1	Female,	White,	50	Native,	Widow,		Neg.
Blood,	1	Male,	White,	56	Native,	Married,	Engineer,	Neg.
Blood,	1	Male,	White,	57	Native,	Married,	Clerk,	Neg.
Blood,	1	Male,	White,	35	Native,	Single,		Neg.
Blood,	1	Female,	Black,	43	Native,	Married,	Housework,	Neg.
Blood,	1	Female,	Black,	36	Native,	Widow,	Housework,	Neg.
Blood,	1	Female,	White,	32		Single,		Neg.
Blood,	1	Female,	White,	29	Native,	Widow,		Neg.
Blood,	1	Male,	White,	45	Native,	Widow,		Neg.
Blood,	1	Female,	White,	24	Native,	Married,		Neg.
Blood,	1							Pos.
Blood,	1	Female,	White,	30	Native,	Married,	Housework,	Neg.
Blood,	1	Female,	White,	32	Native,	Single,		Neg.
Blood,	1	Male,	White,	25	Native,	Married,		Neg.
Blood,	1	Female,	Black,	40	Native,	Married,		Neg.
Blood,	1	Male,	White,	45	Native,	Married,		Neg.

Blood,	1	Female,	White,	46	Native,	Married,		Neg.
Blood,	1	Male,	White,	27	Native,	Married,	Laborer,	Neg.
Blood,	1	Female,	White,	21	Native,	Single,		Pos.
Blood,	1	Male,	White,	35	Foreign,	Married,	Baker,	Neg.
Blood,	1	Male,	White,	64	Foreign,	Married,	Laborer,	Pos.
Blood,	1	Male,						
Blood,	1	Female,	White,	37	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	25	Foreign,	Single,	Barber,	Neg.
Blood,	1	Male,	White,	32	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Female,	Black,	29	Native,	Married,	Housework,	Pos.
Blood,	1	Male,	White,	31	Foreign,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	25	Foreign,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	26	Native,	Single,	Brakeman,	Pos.
Blood,	1	Male,	White,	38	Native,	Married,	Clerk,	Neg.
Blood,	1	Male,	White,	32	Native,	Single,	Laborer,	Neg.
Blood,	1	Female,	White,		Native,	Married,	Housework,	Neg.
Blood,	1	Female,	White,		Native,	Married,	Housework,	Pos.
Blood,	1	Male,	White,	40	Native,	Married,	Clerk,	Neg.
Blood,	1	Female,	White,	36	Native,	Married,	Housework,	Neg.
Blood,	1	Female,	White,	55	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	26	Native,	Single,	Clerk,	Neg.
Blood,	1	Female,	White,	54	Native,	Widow,	Domestic,	Pos.
Blood,	1	Female,	White,	24	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	24	Foreign,	Single,	Blacksmith,	Neg.
Blood,	1	Male,	White,	39	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	35	Native,	Single,	Salesman,	Neg.
Blood,	1	Male,	White,	34	Native,	Married,	Agent,	Neg.
Blood,	1	Male,	White,	45	Native,	Married,	Salesman,	Neg.
Blood,	1	Male,	White,	36	Native,	Married,	Clerk,	Pos.
Blood,	1	Male,	White,		Native,	Married,	Clerk,	Pos.
Blood,	1	Male,	White,		Native,	Married,		Pos.
Blood,	1	Male,	White,	32	Native,	Married,		Pos.
Blood,	1	Male,	White,	30	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	29	Native,	Widower,	Laborer,	Neg.
Blood,	1	Male,	White,	26	Native,		Salesman,	Neg.
Blood,	1	Male,	White,	35	Native,	Married,	Laborer,	Pos.
Blood,	1	Male,	White,	28	Native,	Single,	Salesman,	Neg.
Blood,	1	Male,		27	Native,	Single,	Clerk,	Neg.
Blood,	1	Male,	White,	47	Native,	Single,	Jeweler,	Neg.
Blood,	1	Female,	White,	56	Native,	Divorced,	Housework,	Neg.
Blood,	1	Female,	White,	38	Native,	Widow,	Housework,	Neg.
Blood,	1	Male,	White,	47	Native,	Married,		Neg.
Blood,	1	Male,	White,	65	Foreign,	Widower,		Neg.
Blood,	1	Male,	White,	49	Native,	Married,	Machinist,	Neg.
Blood,	1	Male,	White,	42	Native,	Married,	Salesman,	Pos.
Blood,	1	Male,	White,	44	Native,	Married,	Clerk,	Pos.
Blood,	1	Female,	White,	23	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	23	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	30	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	32	Native,	Single,	Laborer,	Neg.

WASSERMANN TESTS—Continued.

Nature of Specimen.	No. of specimens from this patient.	Sex.	Color.	Age.	Native or Foreign.	Conjugal Condition.	Occupation.	Pos. or Negative.
Blood,	1	Male,	White,	40		Widower,	Salesman,	Neg.
Blood,	1	Female,	White,	30	Native,	Single,	Clerk,	Pos.
Blood,	1	Female,	White,	42	Native,	Married,	Housework,	Pos.
Blood,	1	Male,	White,	27	Native,	Single,	Clerk,	Pos.
Blood,	1	Male,	White,	29	Foreign,	Married,	Weaver,	Neg.
Blood,	1	Male,	White,	33	Foreign,	Widower,	Laborer,	Pos.
Blood,	1	Female,	White,	23	Foreign,	Married,	Housework,	Pos.
Blood,	1	Male,	White,	23	Native,	Single,		Pos.
Blood,	1	Male,	White,	46	Foreign,	Married,	Merchant,	Pos.
Blood,	1	Male,	White,	28	Native,	Married,	Salesman,	Pos.
Blood,	1	Male,	White,	58	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	23	Foreign,	Single,	Clerk,	Neg.
Blood,	1	Male,	White,	28	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	30	Native,	Single,	Bartender,	Neg.
Blood,	1	Male,	White,	21	Foreign,	Single,		Neg.
Blood,	1	Male,	White,		Native,	Single,		Neg.
Blood,	1	Female,	White,	21	Native,	Single,	Housework,	Pos.
Blood,	1	Male,	White,	25	Foreign,	Single,	Miner,	Pos.
Blood,	1	Male,	White,	40	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	36	Foreign,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	34	Foreign,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	38	Foreign,	Single,	Clerk,	Pos.
Blood,	1	Male,	White,	29	Native,	Married,	Laborer,	Pos.
Blood,	1	Male,	White,	42	Native,	Married,	Electrician,	Neg.
Blood,	1	Female,	White,	35	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	46	Native,	Married,	Electrician,	Pos.
Blood,	1	Male,	White,	26	Native,	Single,	Railroader,	Pos.
Blood,	1	Female,	White,	62	Native,	Widow,	Housework,	Neg.
Blood,	1	Male,	White,	16	Native,	Single,	Laborer,	Neg.
Blood,	1	Female,	White,	40	Native,	Married,		Neg.
Blood,	1	Female,	White,	27	Native,	Single,	Housework,	Neg.

Blood,	1	Male,	White,	42	Foreign,	Married,	Miner,	Neg.
Blood,	1	Male,	White,	40	Foreign,	Married,	Miner,	Neg.
Blood,	1	Female,	White,	29	Native,	Married,	Housework,	Neg.
Blood,	1	Female,	White,	29	Foreign,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	29	Native,	Single,	Laborer,	Pos.
Blood,	2nd	Male,	White,	29	Native,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,	26	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	50	Native,	Married,	Machinist,	Neg.
Blood,	1	Male,	White,	26	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	28	Foreign,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	30	Native,	Single,	Clerk,	Neg.
Blood,	1	Male,	White,	38	Foreign,	Married,	Miner,	Neg.
Blood,	1	Male,		32		Single,	Laborer,	Neg.
Blood,	1	Male,	White,			Single,	Laborer,	Neg.
Blood,	1	Male,	White,	32	Native,	Married,	Laborer,	Pos.
Blood,	1	Male,	White,	49	Native,	Married,	Miner,	Neg.
Blood,	1	Female,	White,	33	Native,	Married,	Housework,	Neg.
Blood,	1	Female,	White,	26	Native,	Divorced,	Nurse,	Pos.
Blood,	1	Male,	White,	37	Native,	Married,	Electrician,	Pos.
Blood,	1	Male,	White,	37	Native,	Married,	Clerk,	Pos.
Blood,	1	Female,	White,	31	Native,	Married,	Housework,	Pos.
Blood,	1	Male,	White,	27	Native,	Married,	Bookkeeper,	Neg.
Blood,	1	Male,	White,	39	Foreign,	Married,	Machinist,	Neg.
Blood,	1	Female,	White,	32	Native,	Divorced,		Neg.
Blood,	1	Male,	White,	28	Foreign,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	24	Native,	Single,		Neg.
Blood,	1	Male,	White,	44	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	22		Single,		Pos.
Blood,	1	Female,	White,	20	Native,	Single,	Housework,	Pos.
Blood,	1	Male,	White,	23	Foreign,	Single,	Waiter,	Neg.
Blood,	1	Male,	White,	36	Native,	Married,	Draughtsman,	Neg.
Blood,	1	Male,	White,	44	Native,	Single,	Laborer,	Pos.
Blood,	1	Male,	Black,	27	Foreign,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	48		Widower,	Rai'roader,	Pos.
Blood,	1	Male,	White,	43	Native,	Married,	Laborer,	Pos.
Blood,	1	Male,	White,	45	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,		Foreign,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	25	Native,	Married,	Machinist,	Pos.
Blood,	2nd	Male,	White,	25	Native,	Single,	Mechanic,	Pos.
Blood,	1	Male,	White,	48	Native,	Married,	Clerk,	Neg.
Blood,	1	Female,	White,	40	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	45	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	21	Native,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,	27	Foreign,	Single,	Laborer,	Neg.
Blood,	1	Female,	White,	24	Native,	Married,	Housework,	Pos.
Blood,	1	Male,	White,	19	Native,	Single,	Laborer,	Neg.
Blood,	1	Female,	White,	25	Native,	Married,	Housework,	Pos.
Blood,	1	Male,	White,		Native,	Married,	Farmer,	Neg.
Blood,	1	Male,	White,	41	Native,	Married,	Clerk,	Pos.
Blood,	1	Female,	White,	32			Topper,	Neg.

WASSERMANN TESTS—Continued.

Nature of Specimen.	No. of specimens from this patient.	Sex.	Color.	Age.	Native or Foreign.	Conjugal Condition.	Occupation.	Pos. or Negative.
Blood,	1	Male,	White,	50	Native,	Married,	Car builder,	Neg.
Blood,	1	Male,	White,		Native,	Married,	Saddler,	Neg.
Blood,	1	Female,	White,	30	Native,	Single,	Housework,	Pos.
Blood,	1	Male,	White,	47	Native,	Married,	Motorman,	Neg.
Blood,	1	Male,	Black,		Native,	Married,	Conductor,	Neg.
Blood,	1	Female,	White,	42	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,		Native,	Single,		Pos.
Blood,	2nd	Male,	White,		Native,	Single,		Pos.
Blood,	1	Male,	White,	18	Native,	Single,		Pos.
Blood,	1	Male,	White,	31	Foreign,	Single,	Miner,	Neg.
Blood,	1	Male,	White,	31	Native,	Single,	Clerk,	Pos.
Blood,	1	Male,	White,	31	Foreign,	Single,	Miner,	Pos.
Blood,	1	Female,	White,	33	Foreign,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	39	Native,	Married,	Painter,	Neg.
Blood,	1	Female,	White,	28	Foreign,	Married,	Housework,	Neg.
Blood,	1	Female,	White,	28	Foreign,	Married,	Housework,	Neg.
Blood,	1	Female,	White,	47	Native,	Widow,	Housework,	Neg.
Blood,	1	Female,	White,	32	Foreign,	Married,	Miner,	Neg.
Blood,	1	Male,	White,	28	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	28	Native,	Single,	Miner,	Neg.
Blood,	1	Male,	White,	27	Native,	Single,	Miner,	Pos.
Blood,	1	Male,						Neg.
Blood,	1	Male,	White,	30	Native,	Single,	Clerk,	Neg.
Blood,	1	Male,						Pos.
Blood,	1	Male,	White,	31	Native,	Single,	Laborer,	Pos.
Blood,	1	Female,	White,	36	Native,	Married,	Housework,	Neg.
Blood,	1	Female,	White,	49	Native,	Widow,	Housework,	Neg.
Blood,	1	Male,	White,	26	Native,	Single,		Neg.
Blood,	1	Male,	White,	68	Native,	Married,	Laborer,	Neg.
Blood,	1	Female,	White,	29	Native,	Married,	Housework,	Neg.
Blood,	1	Female,	White,	17	Native,	Single,	Shop girl,	Neg.

Blood,	1	Female,	White,	31	Native,	Married,	Housework,	Neg.
Blood,	1	Female,	White,	22	Native,	Married,	Housework,	Neg.
Blood,	1	Female,	White,	37	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	20	Native,	Married,	Laborer,	Pos.
Blood,	1	Male,	White,		Foreign,	Single,	Miner,	Pos.
Blood,	1	Male,	White,	65	Native,	Married,	Laborer,	Neg.
Blood,	1	Female,	White,	21	Native,	Single,	Factory girl,	Pos.
Blood,	1	Female,	White,	52	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	31	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	13	Native,	Single,		Neg.
Blood,	1	Male,	White,	29	Native,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,	23	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	37	Native,	Widower,	Laborer,	Pos.
Blood,	1	Male,	White,	37	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	19	Native,	Single,	Cigar maker,	Neg.
Blood,	1	Female,	White,	38	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	25	Native,	Single,	Clerk,	Neg.
Blood,	1	Male,	White,	30	Native,	Single,		Neg.
Blood,	1	Male,	White,	28	Foreign,	Single,		Neg.
Blood,	1	Female,	White,	15	Native,	Single,		Pos.
Blood,	1	Female,	White,	16	Native,	Single,		Pos.
Blood,	1	Female,	White,	38	Native,	Single,		Neg.
Blood,	1	Male,						Neg.
Blood,	1	Male,	White,		Native,	Single,		Neg.
Blood,	1	Male,						Neg.
Blood,	1	Male,	White,	31	Native,	Single,	Clerk,	Pos.
Blood,	1	Male,						Neg.
Blood,	1	Male,	White,	27	Native,	Single,	Tailor,	Neg.
Blood,	1	Male,	White,	26	Foreign,	Single,		Neg.
Blood,	1	Male,	Black,	29	Native,	Single,	Cook,	Neg.
Blood,	1	Male,	White,	37	Native,	Married,	Printer,	Neg.
Blood,	1	Female,	White,	33		Widow,		Pos.
Blood,	1	Male,	White,	48		Married,		Pos.
Blood,	1	Male,		23		Single,	Farmer,	Pos.
Blood,	1	Female,	White,	32	Native,	Married,	Housework,	Neg.
Blood,	2nd	Female,	White,	32	Native,	Married,	Housework,	Neg.
Blood,	1	Female,	White,	21	Native,	Married,	Housework,	Pos.
Blood,	1	Male,	White,	39	Native,	Married,	Trainman,	Neg.
Blood,	1	Male,	White,	34		Single,	Railroad man,	Pos.
Blood,	1	Female,	White,	15	Native,	Single,		Pos.
Blood,	1	Female,	White,	23	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	25	Native,	Single,	Bartender,	Neg.
Blood,	1	Male,	White,	23	Foreign,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,	48	Native,	Single,		Neg.
Blood,	1	Male,	White,	40	Native,	Married,	Salesman,	Neg.
Spinal fluid,	1	Male,	White,	45	Native,		Salesman,	Neg.
Blood,	1	Male,	White,	29	Native,	Married,	Weaver,	Pos.
Blood,	1	Male,	White,	49	Native,	Married,		Neg.
Blood,	1	Female,	White,	20	Native,	Married,	Housework,	Neg.
Blood,	2nd	Female,	White,	20	Native,	Married,	Housework,	Neg.

WASSERMANN TESTS—Continued.

Nature of Specimen.	No. of specimens from this patient.	Sex.	Color.	Age.	Native or Foreign.	Conjugal Condition.	Occupation.	Pos. or Negative.
Blood,	1	Male,		24	Native,	Single,	Telegrapher,	Neg.
Blood,	1	Male,	White,	31	Native,	Single,	Painter,	Neg.
Blood,	1	Male,		46	Native,	Married,	Mechanic,	Pos.
Blood,	1	Male,	White,	27	Native,	Married,	Farmer,	Neg.
Blood,	1	Male,	White,	22	Native,	Single,	Chauffeur,	Pos.
Blood,	1	Male,	White,	24	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,						Neg.
Blood,	1	Female,	White,	18	Native,	Single,		Pos.
Blood,	1	Female,	White,	16	Native,	Single,		Pos.
Blood,	1	Female,	White,	18	Native,	Single,		Neg.
Blood,	1	Male,	White,	55	Foreign,	Married,	Miner,	Neg.
Blood,	1	Male,	White,	40	Foreign,	Married,	Carpenter,	Pos.
Blood,	3rd	Male,	White,	38	Native,	Married,	Carpenter,	Pos.
Blood,	1	Male,	White,	48	Native,	Widower,	Railroader,	Neg.
Blood,	1	Female,	White,	29	Native,	Married,	Housework,	Neg.
Blood,	1	Female,	White,	34	Foreign,	Married,	Housework,	Neg.
Blood,	2nd	Male,		25	Native,	Single,		Neg.
Blood,	1	Male,	Black,	25	Native,	Single,		Pos.
Blood,	2nd	Male,	Black,	21	Native,	Single,	Laborer,	Neg.
Blood,	1	Female,	Black,	35	Native,	Married,	Housework,	Pos.
Blood,	1	Male,	White,	30	Foreign,	Married,	Miner,	Pos.
Blood,	1	Male,	White,	37	Foreign,	Single,	Miner,	Neg.
Blood,	1	Male,	White,	51	Native,	Married,	Laborer,	Neg.
Blood,	1	Female,	White,	20	Native,	Single,	Mill work,	Pos.
Blood,	1	Male,		30	Native,	Single,	Clerk,	Neg.
Blood,	2nd	Male,	White,	32	Native,	Single,	Clerk,	Pos.
Blood,	1	Male,	White,	26	Native,	Single,	Clerk,	Pos.
Blood,	1	Male,	White,	46	Foreign,	Single,		Neg.
Blood,	1	Male,	White,	32	Native,	Single,		Neg.
Blood,	1	Male,	White,	68	Native,	Widower,		Pos.
Blood,	1	Male,	White,	37	Native,	Single,	Contractor,	Neg.

Blood,	1	Male,	White,	37	Native,	Single,	Clerk,	Neg.
Blood,	1	Male,	White,	42	Native,	Married,		Neg.
Blood,	1	Male,	White,	28	Native,	Married,	Driver,	Neg.
Blood,	1	Male,	White,	55	Native,	Married,		Neg.
Blood,	1	Female,	White,	28	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	52	Native,	Married,		Neg.
Blood,	1	Male,	White,	23	Native,	Single,	Artist,	Neg.
Blood,	1	Female,	White,	9	Native,	Single,		Neg.
Blood,	1	Male,	White,	26	Native,	Single,		Pos.
Blood,	1	Male,	White,	28	Native,	Single,		Neg.
Blood,	1	Male,	White,	54	Native,	Married,		Neg.
Blood,	1	Male,	White,	43	Native,	Married,		Neg.
Blood,	1	Male,	White,		Foreign,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	36	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	24	Native,	Single,		Pos.
Blood,	1	Male,	White,	27	Native,	Single,		Pos.
Blood,	1	Male,	White,	53	Foreign,	Single,	Clerk,	Neg.
Blood,	1	Male,	Black,	32	Native,	Single,	Laborer,	Neg.
Blood,	1	Female,		21	Native,	Single,	Housework,	Pos.
Blood,	1	Male,	White,	40	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	25	Native,	Single,	Barber,	Pos.
Blood,	1	Male,	White,	21	Native,	Single,		Pos.
Blood,	1	Male,	White,	19	Foreign,	Single,		Pos.
Blood,	1	Male,	White,	19	Native,	Single,	Clerk,	Pos.
Blood,	1	Male,	White,	33	Native,	Widower,	Laborer,	Neg.
Blood,	1	Male,	White,	26	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	25	Native,	Married,		Neg.
Blood,	1	Female,	White,	26	Native,	Married,		Pos.
Blood,	1	Male,	White,	42	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	32	Native,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,	28	Foreign,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	32	Foreign,	Single,	Miner,	Neg.
Blood,	1	Female,	White,	35	Foreign,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	28	Native,	Single,	Minister,	Pos.
Blood,	2nd	Female,	White,	22	Native,	Married,	Housework,	Pos.
Blood,	1	Male,						Neg.
Blood,	1	Male,						Pos.
Blood,	1	Female,		22			Housework,	Pos.
Blood,	2nd	Male,	White,	20	Native,	Single,	Carpenter,	Pos.
Blood,	1	Male,	White,		Native,	Single,		Pos.
Blood,	1	Male,	White,	35		Married,	Plumber,	Pos.
Blood,	1	Male,	White,			Married,	Laborer,	Neg.
Blood,	1	Female,	White,	20	Foreign,		Housework,	Neg.
Blood,	1	Male,	White,	24	Foreign,			Pos.
Blood,	1	Male,						Neg.
Blood,	1	Male,	White,	40	Native,	Married,	Salesman,	Pos.
Blood,	1	Male,	White,	25	Native,	Single,	Carpenter,	Neg.
Blood,	1	Male,	White,	22	Foreign,	Single,	Laborer,	Neg.
Blood,	1	Female,	White,	25	Native,	Married,	Housework,	Pos.
Blood,	1	Male,	White,	24	Native,	Married,	Laborer,	Neg.

WASSERMANN TESTS—Continued.

Nature of Specimen.	No. of specimens from this patient.	Sex.	Color.	Age.	Native or Foreign.	Conjugal Condition.	Occupation.	Pos. or Negative.
Blood,	1	Male,	White,	20	Native,	Single,	Laborer,	Neg.
Blood,	2nd	Female,	White,	27	Foreign,	Single,		Neg.
Blood,	1	Male,	White,	18	Native,	Single,		Neg.
Blood,	1	Female,	White,	37	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	53	Native,	Married,	Laborer,	Pos.
Blood,	1	Male,	White,	35	Native,	Married,	Painter,	Neg.
Blood,	1	Male,	White,	60	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	27	Native,	Single,		Neg.
Blood,	1	Female,	Black,	27	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	50	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Female,	White,	30	Native,	Single,	Stenographer,	Neg.
Blood,	1	Female,	White,	27	Native,	Single,	Clerk,	Neg.
Blood,	1	Male,	White,	34	Native,	Married,	Mechanic,	Neg.
Blood,	1	Male,	White,	32	Native,	Single,	Acrobat,	Neg.
Blood,	1	Male,	White,	31	Native,	Married,	Driver,	Neg.
Blood,	1	Male,	White,	20	Native,	Single,	Clerk,	Pos.
Blood,	1	Male,	White,	27	Native,	Married,	Laborer,	Neg.
Blood,	1	Female,	White,	23	Native,	Married,	Housework,	Pos.
Blood,	1	Male,	White,	43	Foreign,	Widower,	Machinist,	Neg.
Blood,	1	Male,	White,	28	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	58		Single,	Laborer,	Neg.
Blood,	1	Female,	White,		Foreign,	Married,	Housework,	Neg.
Blood,	1	Female,	White,	37	Native,	Widow,	Housework,	Neg.
Blood,	1	Male,	White,	21	Native,	Single,	Laborer,	Pos.
Blood,	1	Female,	White,	40	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	33	Native,	Single,	Musician,	Pos.
Blood,	1	Male,	White,	53		Married,	Laborer,	Neg.
Blood,	1	Male,	White,	44	Native,	Married,	Salesman,	Pos.
Blood,	1	Female,	White,	13	Native,	Single,		Neg.
Blood,	1	Female,	White,	34	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	22	Native,	Single,	Laborer,	Neg.

Blood,	1	Male,	White,	23	Foreign,	Married,	Clerk,	Neg.
Blood,	1	Male,	White,	22	Native,	Single,	Carpenter,	Pos.
Blood,	1	Male,	White,	29	Native,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,	23	Native,	Single,	Laborer,	Neg.
Blood,	2nd	Male,	White,	38	Native,	Single,	Janitor,	Neg.
Blood,	1	Male,	White,	35	Native,	Single,	Janitor,	Neg.
Blood,	1	Male,	White,	30	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	29	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	22	Native,	Single,	Clerk,	Neg.
Blood,	1	Female,	White,	34	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	21	Native,	Married,	Machinist,	Neg.
Blood,	1	Female,	White,	34	Foreign,	Married,	Housework,	Neg.
Blood,	1	Male,	White,		Native,	Single,	Clerk,	Neg.
Blood,	1	Male,	White,	27	Native,	Single,	Railroader,	Neg.
Blood,	1	Female,	White,	3	Native,	Single,		Neg.
Blood,	1	Male,	White,	21	Native,	Single,	Operator,	Neg.
Blood,	1	Male,	White,	6	Native,	Single,		Neg.
Blood,	1	Male,	White,	48	Native,	Married,	Hotel man,	Neg.
Blood,	1	Male,	White,	27	Native,	Married,	Railroader,	Neg.
Blood,	1	Male,	White,	19	Native,	Single,	Laborer,	Neg.
Blood,	1	Female,	White,	25	Native,	Single,	Housekeeper,	Neg.
Blood,	1	Male,	White,	25	Native,	Married,	Laborer,	Neg.
Blood,	1	Female,	White,	50	Native,	Married,	Housework,	Neg.
Blood,	1	Female,	White,	43	Native,	Married,	Housework,	Neg.
Blood,	1	Female,	White,	58	Native,	Widow,	Housework,	Neg.
Blood,	1	Male,	White,	31	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	25	Native,	Single,	Clerk,	Pos.
Blood,	1	Male,	White,	36	Foreign,	Married,		Neg.
Blood,	1	Female,	White,	28	Native,	Married,	Machinist,	Pos.
Blood,	1	Female,	White,	36	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,		Native,	Single,		Neg.
Blood,	2nd	Male,	White,	54	Native,	Married,	Watchman,	Pos.
Blood,	1	Male,	White,	35	Native,	Married,	Engineer,	Pos.
Blood,	1	Male,	White,	19	Native,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,	54	Native,	Married,	Watchman,	Neg.
Blood,	1	Female,	White,	30	Native,	Single,	Housework,	Neg.
Blood,	1	Male,	White,	27	Foreign,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	54	Native,	Married,	Farmer,	Neg.
Blood,	1	Female,	White,	23	Native,	Widow,	Housework,	Neg.
Blood,	1	Female,	White,	21	Native,	Single,	Clerk,	Neg.
Blood,	1	Male,	White,	35	Native,	Married,	Housework,	Neg.
Blood,	1	Male,	White,	16	Native,	Single,	Clerk,	Neg.
Blood,	1	Male,	White,	20	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	25	Native,	Single,	Electrician,	Pos.
Blood,	1	Male,	White,	26	Native,	Single,	Electrician,	Neg.
Blood,	1	Male,	White,	22	Native,	Single,	Salesman,	Pos.
Blood,	1	Male,	White,	22	Native,	Single,	Motorman,	Neg.
Blood,	1	Male,	White,	19	Native,	Single,	Machinist,	Pos.
Blood,	1	Male,	White,	48	Native,	Married,	Salesman,	Neg.
Blood,	1	Male,	White,	35	Native,	Married,	Salesman,	Pos.

WASSERMANN TESTS—Continued.

Nature of Specimen.	No. of specimens from this patient.	Sex.	Color.	Age.	Native or Foreign.	Conjugal Condition.	Occupation.	Pos. or Negative.
Blood,	1	Male,	White,	14	Native,			Neg.
Blood,	1	Female,	White,	26	Native,	Married,		Neg.
Blood,	1	Male,	Black,	44	Native,	Widower,		Neg.
Blood,	2nd	Male,	Black,	45	Native,	Widower,	Laborer,	Neg.
Blood,	1	Male,	White,	19	Foreign,	Single,	Laborer,	Neg.
Blood,	1	Female,	White,	36	Native,		Housework,	Pos.
Blood,	1	Male,	White,	23	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	58	Native,	Married,		Neg.
Blood,	1	Male,	White,	30	Foreign,	Single,	Laborer,	Neg.
Blood,	1							Neg.
Blood,	1	Male,	White,	33	Foreign,	Married,	Mill work,	Neg.
Blood,	1	Male,		22		Single,	Barber,	Neg.
Blood,	1	Male,	White,	48	Native,	Married,	Salesman,	Pos.
Blood,	1	Female,	White,	20	Native,	Single,		Neg.
Blood,	1	Female,	White,	22	Native,	Single,	Stenographer,	Neg.
Blood,	1	Male,	White,	31	Foreign,	Single,		Neg.
Blood,	1	Male,	White,	21	Native,	Single,	Clerk,	Neg.
Blood,	1	Male,	White,	34	Native,	Married,	Railroader,	Pos.
Blood,	2nd	Male,	White,	36	Native,	Married,		Pos.
Blood,	1	Male,	White,	42	Native,	Married,	Conductor,	Neg.
Blood,	1	Female,	White,	32	Native,	Married,		Neg.
Blood,	1	Male,	White,	23	Native,	Single,	Mill worker,	Pos.
Blood,	1	Male,	White,	34	Native,	Single,	Engineer,	Pos.
Blood,	1	Male,	White,	20	Native,	Married,	Iceman,	Neg.
Blood,	1	Male,	White,	33	Native,	Single,	Mill work,	Neg.
Blood,	1	Male,	White,	24	Native,	Single,		Neg.
Blood,	1	Male,		30	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	Black,	20	Native,	Single,		Pos.
Blood,	1	Male,	White,	9				Neg.
Blood,	1	Male,	White,	27	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	30	Foreign,	Married,	Laborer,	Neg.

Blood,	1	Male,	Black,	40	Native,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	34	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Male,	White,	40	Native,	Single,		Pos.
Blood,	1	Male,	White,	30	Foreign,	Married,		Pos.
Blood,	1	Male,	White,	35	Native,	Single,		Pos.
Blood,	1	Male,	White,	45	Foreign,	Married,	Laborer,	Neg.
Blood,	1	Female,	Black,	30	Native,	Married,	Housework,	Neg.
Blood,	1	Female,	White,	41	Native,	Divorced,	Laborer,	Neg.
Blood,	1	Female,	Black,	30	Native,	Married,		Neg.
Blood,	1	Male,	White,	40	Native,	Married,		Neg.
Blood,	1	Male,	White,	26	Foreign,	Married,	Salesman,	Neg.
Blood,	1	Male,	White,	26	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	32	Native,	Married,	Pharmacist,	Neg.
Blood,	1							Neg.
Blood,	1							Neg.
Blood,	1	Female,						Neg.
Blood,	1	Male,	White,	60	Native,	Single,	Clerk,	Pos.
Blood,	1	Male,	White,	35	Native,	Single,	Engineer,	Neg.
Blood,	1	Male,	White,		Foreign,	Single,	Laborer,	Pos.
Blood,	1	Male,	White,	20	Native,	Single,		Neg.
Blood,	1	Male,	White,	35	Foreign,	Married,	Miner,	Neg.
Blood,	2nd	Male,	White,	33	Native,	Single,		Neg.
Blood,	2nd	Male,	White,	22	Native,	Single,	Butcher,	Neg.
Blood,	1	Male,	White,	27	Native,	Single,	Machinist,	Pos.
Blood,	1	Male,	White,	32	Native,	Single,	Carpenter,	Neg.
Blood,	1	Female,	White,	28	Native,	Married,	Housework,	Pos.
Blood,	2nd	Female,	White,	28	Native,	Married,	Housework,	Pos.
Blood,	2nd	Male,	White,	27	Foreign,	Single,		Pos.
Blood,	2nd	Male,	White,	29	Foreign,	Married,	Mill work,	Neg.
Blood,	1	Female,	White,	24	Native,	Married,	Laundry,	Pos.
Blood,	1	Male,	White,	36	Native,	Single,	Teacher,	Neg.
Blood,	1	Male,	White,	30		Single,	Laborer,	Neg.
Blood,	1	Male,	White,		Native,	Widower,		Pos.
Blood,	1	Male,	White,	29	Native,	Single,	Patrolman,	Neg.
Blood,	1	Male,	White,	19		Single,	Laborer,	Pos.
Blood,	1	Female,	White,	24	Native,	Married,	Housework,	Pos.
Blood,	1	Male,	White,	20	Native,	Single,	Laborer,	Neg.
Blood,	1	Female,	White,	32	Native,	Married,		Neg.
Blood,	1	Male,	White,	34	Foreign,	Single,	Factory,	Pos.
Blood,	1	Male,	White,	24	Native,	Single,	Factory,	Neg.
Blood,	1	Male,		22	Native,	Single,	Laborer,	Neg.
Blood,	1	Male,	White,	71	Native,	Divorced,	Physician,	Pos.
Blood,	1	Male,	White,	24	Native,	Single,	Miner,	Neg.
Blood,	1	Male,	White,	22	Foreign,	Married,	Miner,	Neg.
Blood,	1	Male,	White,	35	Native,	Married,	Laborer,	Pos.

As parts of the special researches undertaken in the Laboratories during the past year, the following may be reported at this time:

I. EXPERIMENT ON THE CURATIVE VALUE OF THE SERUM OF RABBITS IMMUNIZED WITH THE UNHEATED FILTRATE OF BOUILLON CULTURES OF TUBERCLE BACILLI.

Three ten weeks old cultures of the tubercle bacillus (Human Culture No. 2) were filtered through paper and afterward through porcelain, and with this unheated filtrate the immunization of six healthy rabbits averaging one kilogram in weight was begun.

A human culture was used in the immunization process with the thought in mind that for the large injection amounts which we intended to use there would be little or no reaction, whereas, if a bovine culture were used untoward results might ensue which would negative the experiment; and further that as we intended to treat guinea pigs inoculated with the human type of the tubercle bacillus with the serum of the immunized rabbits, it seemed reasonable that an homologous serum should be used.

Injections of the rabbits were begun with an initial dose of bouillon filtrate equivalent to one milligram of tubercle bacilli. This amount was injected semi-weekly four times. Five milligrams were given twice; ten milligrams twice; then twenty milligrams once; fifty milligrams once, and finally one hundred milligrams were given semi-weekly for two months. A rest of four weeks was given the rabbits before bleeding to obtain immune serum for the treatment of the tuberculous guinea pigs.

On January 26, 1915, fourteen guinea pigs, Nos. 1670 to 1683, inclusive, were inoculated with 0.1 mg. tubercle bacilli (Human No. 2). Nos. 1671 and 1678 served as control animals and were not subsequently treated with the serum as were the other twelve.

On February 11th treatment was begun and continued weekly, one cubic centimeter of the serum of the immunized rabbits being given each week until the animals died.

TABLE—AUTOPSY NOTES.

G. P. 1670: Died March 2. Enteritis was the immediate cause of death. A few pneumonic areas seen in the lungs. A few small miliary tubercles appear in liver and in spleen.

G. P. 1671 (Control): Died March 24. Cause of death, pneumonia and acute enteritis. Miliary tubercles in liver and spleen. Lungs free of tubercles.

G. P. 1672: Died March 13. Cause of death, probably anaphylaxis. Acute congestion of liver. Enlargement of spleen with small caseous tuberculous foci. Lungs not involved. No enteritis.

G. P. 1673: Died March 30. Enteritis. No tuberculous lesions

G. P. 1674: Died March 10. Cause of death, pneumonia.

G. P. 1675: Died March 13. Probable cause of death, anaphylaxis. Passive congestion of liver. Caseous tubercles in an enlarged spleen. Lungs not involved. No enteritis.

G. P. 1676: Died April 13. Generalized tuberculosis.

TREATMENT OF GUINEA PIGS INOCULATED WITH HUMAN TUBERCLE BACILLI WITH THE BLOOD SERUM OF RABBITS IMMUNIZED WITH THE FILTRATE OF BOUILLON CULTURES OF TUBERCLE BACILLI.

Pig Number	Jan. 26	February			March				April		Date and Cause of Death
	TB. Inj.	11	18	25	4	11	18	25	1	8	
1670	0.1 mg.	*	*	*							March 2, 1915. Tuberculous enteritis.
1671	0.1 mg.				Control						March 24, 1915. Pneumonia and acute enteritis.
1672	0.1 mg.	*	*	*	*	*					March 13, 1915. Anaphylaxis.
1673	0.1 mg.	*	*	*	*	*	*	*			March 30, 1915. Acute enteritis.
1674	0.1 mg.	*	*	*	*						March 10, 1915. Pneumonia.
1675	0.1 mg.	*	*	*	*	*					March 13, 1915. Anaphylaxis.
1676	0.1 mg.	*	*	*	*	*		*	*	*	April 13, 1915. Pneumonia with generalized tuberculosis.
1677	0.1 mg.	*	*	*							March 2, 1915. Pneumonia.
1678	0.1 mg.				Control						March 22, 1915. Acute enteritis.
1679	0.1 mg.	*	*	*	*						March 8, 1915. Pneumonia.
1680	0.1 mg.	*	*	*	*	*	*	*			April 1, 1915. Enteritis.
1681	0.1 mg.	*									February 15, 1915. Pneumonia and enteritis.
1682	0.1 mg.	*	*	*	*	*	*				March 24, 1915. Pneumonia.
1683	0.1 mg.	*	*	*							March 6, 1915. Enteritis. Was so ill on March 4 that no injection was made.

*Subcutaneous injection of one cubic centimeter of the immunized rabbit serum.

G. P. 1677: Died March 2. Pneumonia. No tuberculous lesions.

G. P. 1678 (Control): Died March 22. Cause of death, enteritis. Miliary tubercles in liver and spleen. Lungs, normal.

G. P. 1679: Died March 8. Cause of death, pneumonia.

G. P. 1680: Died April 1. Enteritis. No tuberculous lesions.

G. P. 1681: Died February 15. Pneumonia and enteritis.

G. P. 1682: Died March 24. Cause of death, pneumonia. Precaseous tubercles in liver. Marble spleen (caseous tubercles).

G. P. 1683: Died March 6. Immediate cause of death, acute enteritis and congestion of the lungs. Miliary tubercle in liver and spleen.

It was thought that some antibody might be developed in the serum of the rabbit after being inoculated over a period of several weeks with graduated doses of the toxic filtrate of bouillon cultures of the tubercle bacillus which would supply a passive immunization to a guinea pig recently inoculated with a small dose of tubercle bacilli.

No such immunity was produced, however, as the guinea pigs all died within two weeks of the time of death of the controls.

II. EXPERIMENT TO DEMONSTRATE THE CURATIVE VALUE OF TUBERCLE BACILLI DIGESTED WITH PEPSIN AND TRYPSIN.

Six veal glycerine bouillon cultures of tubercle bacilli (Human No. 2) ten weeks old were filtered off and shaken up in 500 c.c. 0.85% solution of sodium chloride acidified with hydrochloric acid. One gram of U. S. P. pepsin was then added to this emulsion of tubercle bacilli and this mixture was placed in the incubator at 37.5 degrees Centigrade and allowed to remain there for three hours.

At the end of that time the mixture in the flask was taken from the incubator, neutralized, and rendered alkaline by the addition of a normal solution of sodium hydroxide. To this alkalinized emulsion of tubercle bacilli was then added one gram of U. S. P. trypsin.

This was again incubated for three hours, after which the emulsion was passed through a bacteria proof Berkefeldt filter and to this filtrate was added 0.5% carbolic acid for preservation of sterility. This filtrate, containing the digested products of the tubercle bacillus, was the agent used for treatment in the manner here described.

On June 15th twelve guinea pigs were inoculated with one one-hundredth of a milligram (0.00001 gm.) of tubercle bacilli (Human No. 2) subcutaneously. The pigs were numbered from 1712 to 1723, inclusive, and varied in weight from 225 to 525 grams. The control pig, No. 1716, weighed 525 grams, and thus, being the heaviest and most healthy looking of the lot, was for that reason taken as control.

Treatment on the other eleven animals was begun two weeks after inoculation with tubercle bacilli by injection under the skin of one cubic centimeter of the digested products of the tubercle bacillus, obtained by the method above described.

Subcutaneous injections were made under the skin of the flanks of these eleven guinea pigs, once each week until the animals died, the control pig, of course, being inoculated with tubercle bacilli only, on the beginning day of the experiment.

By studying the table it will be seen that with one exception—pig No. 1722—the treated animals lived longer than the control. The death of No. 1722 was caused by a general peritonitis due to the accidental injection of the digested material used for treatment into the peritoneal cavity instead of into the subcutaneous tissue.

TABLE—AUTOPSY NOTES.

G. P. 1712: Died September 13, 1915. Generalized tuberculosis.
G. P. 1713: Died August 14, 1915. Generalized tuberculosis.
G. P. 1714: Died August 3, 1915. Cause of death, heat exhaustion. Miliary tubercles in spleen.
G. P. 1715: Died September 21, 1915. Generalized tuberculosis.
G. P. 1716 (Control): Died July 20, 1915. Generalized tuberculosis. Mediastinal and bronchial lymph nodes greatly enlarged. Miliary tubercles in lungs, liver and spleen and omentum.
G. P. 1717: Died October 7, 1915. Generalized miliary tuberculosis.
G. P. 1718: Died October 7, 1915. Generalized miliary tuberculosis.
G. P. 1719: Died November 15, 1915. Generalized tuberculosis.
G. P. 1720: Died October 19, 1915. Generalized tuberculosis.
G. P. 1721: Died August 10, 1915. Generalized tuberculosis.
G. P. 1722: Died June 30, 1915. Generalized peritonitis due to injection by *accident* into peritoneal cavity instead of under skin.
G. P. 1723: Died November 8, 1915. Generalized tuberculosis.

All of the animals, except the pig accidentally injected intraperitoneally and No. 1714, where death was probably due to excessively hot weather, though miliary tubercles were found in the spleen, died of generalized tuberculosis.

A comparison of the length of life of the treated pigs with that of the control dating from the time of inoculation of the whole set with tubercle bacilli, and excepting the two above mentioned whose deaths were brought about by accidental causes, shows that:

One treated pig lived 14 days longer than the control.
One treated pig lived 25 days longer than the control.
One treated pig lived 52 days longer than the control.
One treated pig lived 55 days longer than the control.
One treated pig lived 63 days longer than the control.
Two treated pigs lived 83 days longer than the control.
One treated pig lived 95 days longer than the control.
One treated pig lived 111 days longer than the control.
One treated pig lived 118 days longer than the control.

The above tabulation, I believe, shows that there is some efficacy in the treatment of tuberculous animals with the digested products of tubercle bacilli obtained by digesting these micro-organisms with pepsin and afterwards with trypsin, digestion being carried on in solutions of acid and alkaline reaction, respectively, and that further experiments with this material should be prosecuted with a large number of animals. It would then seem that the outlook for excellent results in the treatment of tuberculous animals with this digested product is very bright.

ISOLATION OF B. TYPHOSUS FROM CELERY.

During the first part of November, 1915, when considerable typhoid fever existed in South Philadelphia in the Italian quarter, the Commissioner of Health surmised that a large number of cases of the disease were due to the insanitary conditions prevailing in the sidewalk markets in that section where the inhabitants purchased their vegetables and shell-fish. Accordingly the Commissioner detailed Mr. H. E. Moses, Assistant Engineer in the Department, to investigate the condition of these markets. He found all the vegetables exposed to the sweepings of street dirt and to the dirty hands. In the picking over of the vegetables many of the bunches had fallen off the tables into the gutter and had been thrown back on the table for sale.

The shell-fish were fished from dirty barrels into which the storekeeper thrust his filthy hands whenever he wished to get some for a purchaser. The molluscs were usually eaten raw.

After his inspection and observation of such unhygienic conditions of sale, Mr. Moses obtained samples of these food products for bacteriologic examination. These consisted of five peppers, one head of lettuce, four bunches of fennel, four bunches of celery and one bunch of dandelion greens. Of the shell-fish he obtained four clams and four oysters as sold in the shell.

All of each kind of vegetables were washed in one hundred cubic centimeters of sterile water, and one cubic centimeter of this water was plated in one plate of lactose-litmus agar and in one plate of plain agar.

The total number of all kinds of bacterial colonies and the number of colonies of bacillus coli in one cubic centimeter of the hundred cubic centimeters of wash water from each kind of vegetable were as follows:—

	Total of All Kinds.	B. Coli.
Peppers,	35,000	600
Lettuce,	90,000	48
Fennel,	48,000	0
Dandelion,	14,000	0
Celery,	50,000	23,000

An examination for other members of the typhoid-colon group of intestinal bacteria was made with all the vegetables, but none was found except in wash water of the celery, wherein B. Typhosus was isolated in pure culture from colonies on Endo's Medium.

In examining the shell-fish the clams and oysters were washed in their shells in eight hundred cubic centimeters of sterile water. One cubic centimeter of this wash water was plated on lactose-litmus agar

to determine the number of pink colonies or acid producers. Three thousand pink colonies were found, none of which answered the test for B. Coli.

One cubic centimeter of the juice of each oyster and clam was plated on lactose-litmus agar to determine the number of colon bacilli colonies in one cubic centimeter. Pink colonies in the oyster juice varied from 100 to 1,800; in the clam juice from 2,400 to 10,800. Twenty B. Coli were found in the oyster juice of one oyster and two in the clam juice of one clam. The others were free of B. Coli.

Juice from the interior of the oyster and of the clams was planted in lactose-bile medium and plated on Endo's Medium in an attempt to isolate other members of the typhoid-colon group. None were found.



TENTH ANNUAL REPORT

OF THE

COMMISSIONER OF HEALTH

FOR THE

COMMONWEALTH OF PENNSYLVANIA

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DIVISION FOR THE CONTROL OF TUBERCULOSIS.

KARL SCHAFFLE, M.D., *Medical Inspector of Dispensaries (Acting).*

FRED C. JOHNSON, M.D., *Medical Director of the Pennsylvania State Sanatorium for Tuberculosis No. 1, Mont Alto.*

WILLIAM G. TURNBULL, M.D., *Medical Director of the Pennsylvania State Sanatorium for Tuberculosis No. 2, Cresson,*

THOMAS H. A. STITES, M.D., *Medical Director of the Pennsylvania State Sanatorium for Tuberculosis No. 3, Hamburg.*



SUBDIVISION OF TUBERCULOSIS DISPENSARIES.

KARL SCHAFFLE, M.D., *Medical Inspector of Dispensaries (Acting).*

The State tuberculosis dispensaries cared for over 2,000 more patients this year than in the year preceding, in spite of the return of prosperity and the consequent alleviation of much distress. This indicates that the people of Pennsylvania have been impressed by the results already attained by the Department in its attack upon tuberculosis, and are seeking its aid for the definite purpose of obtaining cure or amelioration of their disease rather than with the idea of simply receiving material relief.

Over four-fifths of the 117 dispensaries showed an increase in the number of patients admitted, the number of dispensary visits made by them and the total number treated. Of the 23 dispensaries, which failed to show these gains, some were located in industrial towns which were affected by the wave of prosperity which swept the State, and many were the centers of small communities which had been thoroughly canvassed in previous years. In a number of such communities, the dispensary physicians reported that far-advanced cases were becoming rare and that patients were presenting themselves at a much earlier stage in the progress of the disease than formerly.

On the first of January, there were 9,638 patients enrolled throughout the dispensary system, and 11,879 were admitted during the year, making a total of 21,517 patients under treatment. The patients discharged numbered 11,665. Of these, 41 were pronounced cured, 93 apparently cured, 132 arrested, 969 apparently arrested, 4,859 improved, 4,346 unimproved, 1,210 dead from tuberculosis and 15 dead from other causes. On admission, 3,935 of these patients had been classified as incipient cases, 4,021 as moderately advanced, 3,708 as far advanced. There was one case of tuberculous osteitis. The reasons for discharge other than cure, arrest or death, were transference to sanatoria, 3,804; reference to family physicians, because of non-indigency, 305; removal from the community, 1,609; failure to return, 3,316, and non-compliance with regulations, 249. The proportions of these various causes of discharge are, practically, the same as for other years.

A review of the tables which follow shows that the percentages of native and foreign patients were 68.2 and 31.7, respectively. There

were 6,148 males and 5,517 females, the latter predominating in the first stage of the disease, and the former in the third stage. There were 6,062 white, 297 black and one Chinese. The average age for all cases was 29.0 years; for all males, 31.0 and for all females, 26.2; for the incipient males, 23.9; incipient females, 22.6; far-advanced males, 34.1; far-advanced females, 28.4. Among the 6,360 patients admitted and discharged during the year, 3,047 were single, 2,798 were married, 287 widowed, 29 divorced and 119 separated. Of this same group of 6,360 patients, 3,715 had no family history of tuberculosis; 607 had a history of the disease in the mother or her immediate family; 412 in the father or his immediately family; 547 in brothers or sisters only; 243 in the children or the consort's family; 817 in two or more of the above classes and 19 unstated. The commonest number of tuberculous relatives was one, 1,532 having this number, while the highest number of tuberculous relatives was 11, reported in the case of one moderately advanced female. The preponderance of maternal family history is doubtless due to the greater intimacy of the mother with all of the other members of the family, also, probably, to a greater degree of house infection when the mother is ill. Of the known contact infections, 2,260 were from the patient's family, 418 were from friends and 443 from associates in work; 7 house infections were reported. The types of house of the 11,665 patients discharged were as follows: 5,141 patients lived in private houses, 650 in apartments, 316 in tenements, 128 in boarding houses, 114 in institutions and one in a stable. The housing condition, from the standpoint of crowding, was practically the same as in 1914, the average number of rooms to a family being 2.9 with the average number of persons in the family, 5.3. There were 1,231 instances of entire families being confined to one room. The highest number of families grouped according to the number of rooms used was 4,035, each of whom used three rooms. There were 1,874 families who had five members, while there were 1,118 who had nine or more.

The average family income per month was $42.83, or $6.08 per capita. There were 3,205 patients who had no income except charity. Thus it is obvious that this great service is reaching those for whom it is intended and that there is practically no "dispensary abuse."

A review of the occupation tables shows that this year the lawyers and engineers (surveyors) led the professional group, while physicians were the lowest recorded and music teachers were exempt. The bookkeepers (clerks, copyists) were in their usual lead of the clerical and official group. Commercial travelers more than doubled any other members of the mercantile and trading group, apothecaries being lowest, which is rather remarkable in view of the differences in their outdoor living; but as commercial travelers have always appeared in this position in these tables, although but midway in the census for this group, the irregularities in their habits of eating and sleeping

and the hours of traveling in stuffy cars may account for it. As in previous years, saloon keepers and bartenders lead the public entertainment group; barbers and hair dressers, the personal service group; laborers greatly exceed all other male occupations; and iron and steel workers, machinists, mill and factory operatives and tailors come in the order named in the manufacturing and mechanical industry group; while the enrollment of marble and stone cutters and cigar makers and tobacco workers is relatively low. Miners and quarrymen, which classification has been increasing rapidly of recent years, were nearly four times as numerous as any other members of the agricultural and transportation group, with steam railroad employes, hackmen and teamsters and farmers following in the order named.

As usual, the housewives head the list of female occupations, while servants, mill and factory operatives, dressmakers, bookkeepers followed. There were the same number of laundresses and cigar and tobacco workers, which, however, reached but half of the figures of the occupations just mentioned. This is proportionate to the census of female occupations.

The average time under treatment for the 5,305 patients admitted prior to 1915 and discharged during the year was 20.8 months—greatest for the incipient males, 29.7, and shortest for the far-advanced males, 13.8. The average number of dispensary visits for these patients was 16.5 for males and 21.7 for females. For the 6,360 patients admitted and discharged during the year, the average time under treatment was 2.8 months, and the average number of visits for the dispensary, 3.4, with very slight differences for the classifications or sexes. This is explained by the fact that it is the policy of the Department to endeavor to persuade all patients to apply for sanatorium admission at their first visit to the dispensary, and the majority of sanatorium applicants are sent for within two months. Another policy is prompt reference to family physicians when patients are found to be non-indigent. A third rule is the discharge of patients, at the end of two months, who fail to continue in attendance through moving from the community or through indifference to the advice of the physicians or the efforts of the nurses.

There is a difference in favor of those who gained in weight, over those who lost, of 503. The usual seasonal fluctuation is demonstrated.

New tables are furnished in this report in regard to the incidence and character of previous diseases, symptoms, complications and habits; also a record of sputum examinations. Measles, common colds and whooping cough were the chief diseases in the medical history prior to infection. Cough was, by far, the leading symptom, with dyspnoea second and pain third. Hemorrhage, before admission, was reported by 3,290 patients. The chief complications were adeni-

tis, 742, and laryngitis, 505. Goitre was associated with tuberculosis in 198 cases, syphilis in 64 and malignancy in 10. Only 25 cases of ischio-rectal abscess were noted.

As to habits, 3,103 patients admitted the use of tobacco, 1,989 alcohol and 30 were drug habitues.

The sputum report has resulted in emphatic repetition of the order to obtain a sputum report in every case where cough is present.

The greatest percentage of patients receiving drugs was 10.8 in March and the lowest, 6.6 in August. The physicians in charge of the dispensaries have been instructed to teach the patients and the people of their communities that there is no specific remedy for tuberculosis; that the means for recovery are rest, fresh air, good food and cleanliness of person and surroundings; and that drugs are only to be used in emergency, when some condition interferes with one of these fundamental principles of treatment, such as pain preventing rest, or loss of appetite preventing the taking of food.

A special investigation of the issue of milk by the various dispensaries was made in March, with the result that the following orders were given by the Commissioner:

"It appears to be necessary to remind physicians in charge of dispensaries of the rule of the Department regarding the issue of milk to patients. A patient must be diagnosed as positively tuberculous and his financial status investigated. A patient may be indigent from the standpoint of being unable to pay for sanatorium treatment but may be quite able to buy milk. When milk is ordered, it is to the extent of one quar per day per patient, for six months, at the end of which time it must be stopped, unless in the judgment of the physician it is necessary to continue the milk, on account of patient's condition, six month's longer, which may be done. At the expiration of this time the matter should be referred to the Harrisburg office for consideration, if further supply is desired."

In consequence, there was an abrupt descent in the percentage of patients receiving milk from 45.3 to 31.7, and, later, to 27.6. In spite of this, however, the attendance continued to increase and reached its maximum of 11,329 patients enrolled in June. This proved that the patients appreciated the value of the careful guidance of their lives through the direction of the physicians and the help of the nurses and realized that the change of their habits of life was the chief factor in their progress toward recovery and of greater worth than any material assistance.

The 21,517 patients who were treated this year made 143,808 visits to the dispensaries. The nurses made 159,480 visits to the patients' homes. The ratio of dispensary visits to the number of physicians employed and of the home visits to the number of nurses is shown by months upon the graphic charts. The highest number of dispensary visits per doctor was 71.1 in March, the lowest 56 in November. The

highest number of home visits per nurse was 121.1 in April, the lowest, 98.6 in August, when the majority of nurses are on vacation. There were 116,388½ quarts of milk ordered, 4,045 gallons of oil, which is also used as supplemental food, and 3,195 injections of the biological products of the tubercle bacillus.

"Dixon's Fluid" was used in larger quantities by more dispensary physicians and for longer periods than ever before. The chart, upon which appears the tabulation of the results obtained with this specific treatment, should be carefully studied by anyone who may doubt the efficacy of biological treatment. The instances in which decided improvement followed and was attributed directly to this agency were numerous, while the reports of ill effects, either local or general, were insignificant. The method employed is the gradual increase of dosage at weekly intervals and the avoidance of general or focal reaction by careful observation of the local reaction.

The scope of operations of the bureau for the classification, admission and notification of applicants for sanatorium treatment conducted by this office has broadened considerably this year. There were 6,502 applications received. These were classified according to the age, sex, color and physical conditions described and listed for the various departments of the three sanatoria, accordingly, also by geographical distribution and personal preference. Notifications to report to the sanatoria were sent to 5,716 patients, each notice containing careful directions as to the train schedule and route of travel. Of the number notified, 3,614 patients reported (1,947 to Mont Alto, 1,120 to Hamburg and 547 to Cresson). The greatest number of notices was received in December (789) in spite of the approach of Christmas and cold weather. The greatest number of notifications was sent out in September (610). The waiting list was lowest January 1st, when it was 254 (17 for Mont Alto, 86 for Cresson, 31 for Hamburg and 120 children), and highest August 1st, when it reached 1,000 (294 for Mont Alto, 265 for Cresson, 273 for Hamburg and 168 children).

The Harrisburg Dispensary continued to serve as a resting station for patients en route to sanatoria from distant parts of the State. They receive supper, lodging and breakfast in the dispensary building, with nursing and medical attention when required. A nurse, wearing the Department's badge and brassard as required of all State nurses while on duty, meets the trains coming to Harrisburg with patients for the sanatoria and ushers the arrivals to the special cars which await them. She is prepared to render first aid in emergencies, using the room provided by the Pennsylvania Railroad for that purpose. Children, who are obliged to change cars at any point on the way to the sanatoria, are met by a nurse from the dispensary at or nearest to the point where the change is made. They are further protected by wearing tags which are mailed with their notices to report.

On July 14th, the Commissioner referred all of the "upfollow" work to this office, namely, the supervision of the collection and tabulation of all data regarding ex-sanatorium cases, as well as former dispensary patients. The reports are made by the dispensary nurses, who are required to visit the ex-sanatorium and former dispensary patients for two years after their discharge, at intervals of six months. This is in addition to their routine work of supervision of the patients who are on the active lists. The rather extensive tabulation of the "upfollow" work, in which the results of treatment at the three sanatoria and at the dispensaries are compared, is given elsewhere in this report with explanatory text.

No new dispensaries were opened this year, as the appropriation had been reduced, and it was difficult to operate those already established with the budget provided. No dispensaries were closed, but those at Bradford, Clarion and Stroudsburg were moved from leased rooms to the offices of the respective physicians in charge, thus saving rent and janitors' fees. On June 1st, the dispensary which had been located at 1126 South Twenty-sixth Street, Philadelphia, was moved to 1400 South Twenty-fourth Street, because of the necessity for accommodating its constantly increasing number of patients. Fires occurred in the buildings of the dispensaries at Tamaqua and Scranton, and an explosion of gas wrecked the dispensary at DuBois; but in each instance, the necessary repairs were made by the owners of the properties.

A new form was adopted for reporting the routine work of the dispensary laryngologists (Blank Form 144), and its use was commenced in August. A copy of this form and the results reported thereby appear below. The form for the monthly record of treatment with the biological products of the tubercle bacillus was simplified so that the results might be tabulated with greater ease and accuracy.

Although a blood pressure instrument has been a part of the equipment of each dispensary since the organization of the Division and the findings have been recorded upon the history blanks of patients, there has never been a comprehensive tabulation of these findings for the system throughout the State. The table setting forth these findings, which together with that on the use of Dixon's Fluid, was carefully prepared by the deputy medical inspector, is very interesting. A distinct variation is noted in the blood pressure of patients of the same classification according to geographical distribution. This phenomenon, which was noted first by our statistician, is an original contribution to the literature of the subject. The blood pressure was higher in those patients who were in the western part of the State than in those of the east of the same classifications, sex and age. The chart also shows the complications, which were present, which might have had an effect upon the blood pressure, as well as the condition

of the arteries. Of course, the general observation that blood pressure is low in uncomplicated tuberculosis held true.

A special investigation by the order of the Commissioner was made of the school children of Nanticoke by Dr. Charles H. Miner, of Dispensary No. 1, and the medical inspector of dispensaries, a report of which is appended. The medical inspector of dispensaries was also sent by the Commissioner to act as referee in some cases involving disputes between representatives of the Department and family physicians and between school inspectors and dispensary physicians, as to the diagnosis of tuberculosis in children and others; the school code of Pennsylvania providing that no pupil, teacher or janitor who has tuberculosis shall attend school.

On September 6th, the medical inspector of dispensaries represented the Department at the annual meeting of the State Homeopathic Society, at Buena Vista, and addressed that body on "The State Tuberculosis Dispensary and the Community," and on November 7th read a paper on "The Dispensary as a Bureau for the Admission of Tuberculosis Patients to Hospitals and Sanatoria" before the Eastern Conference of the National Association for the Study and Prevention of Tuberculosis, at Albany. An informal talk was given to the Lycoming County Teachers' Institute on "Tuberculosis in School Children."

There were 163 inspections of dispensaries by the medical inspector and deputy medical inspector as follows:

JANUARY.

By the Medical Inspector.	*By the Deputy Medical Inspector.*
Nanticoke.	Lewistown.
Pottstown.	Mifflintown.
Phoenixville.	New Bloomfield.
Easton.	Mont Alto.
Allentown.	
Mont Alto.	
Milton.	
Williamsport.	
Towanda.	
Shamokin.	
Danville.	

FEBRUARY.

Hamburg.	Waynesboro.
Butler.	Mauch Chunk.
Tarentum.	Tamaqua.
Homestead.	Hamburg.
Pittsburgh.	Lansford.
Frankford.	Gray's Ferry.
Ardmore.	Norristown.

MARCH.

Chambersburg.	West Fairview.
Uniontown.	Carlisle.
Greensburg.	Lebanon.
Washington.	
Waynesburg.	
Punxsutawney.	
Kittanning.	
Clarion.	
Indiana.	

APRIL.

Clearfield.
Philipsburg.
South Bethlehem.
Scranton.
Wilkes-Barre.
Carbondale.
Susquehanna.
Montrose.
Tunkhannock.
Pittston.
Honesdale.
Dushore.
York.
Pottstown.
Phoenixville.
Chambersburg.

MAY.

Bristol.
Doylestown.
West Chester.
Ardmore.
Pottsville.
Bangor.
Stroudsburg.
Easton.
Bradford.
Kane.
Warren.
Emporium.
Ridgway.
Johnstown.
Tyrone.
Cresson.
Altoona.
Huntingdon.
Philadelphia No. 21.

JUNE.

Hanover.
Selinsgrove.
Sunbury.
Harrisburg.

JULY.

Norristown.
(Vacation.)
Renovo.
Corry.
Erie.
Meadville.
Sharon.
New Castle.
Pittsburgh.
McKeesport.
DuBois.
Franklin.

AUGUST.

(Vacation.)
Nanticoke.
Wilkes-Barre.
Hazleton.
Philadelphia No. 931.
Ardmore.
Lewistown.
Punxsutawney.
Indiana.
Johnstown.
Hastings.
Beaver Falls.
Rochester.
Monongahela.
Monessen.

SEPTEMBER.

Waynesboro.
Mifflintown.
Connellsville.
Meyersdale.
Brownsville.
Pittsburgh.
Everett.
Ardmore.
Philadelphia No. 21.

OCTOBER.

Columbia.
Carlisle.
Lebanon.
Altoona.
Bellefonte.
Selinsgrove.
Wellsboro.
Coudersport.
Williamsport.
Pottsville.
Shenandoah.
Mt. Carmel.
Berwick.
Sunbury.
Shamokin.
Danville.
Ardmore.
Reading.
Gettysburg.

NOVEMBER.

Lock Haven.
Oil City.
Titusville.
Erie.
Tionesta.
Franklin.
Meadville.
Sharon.
New Castle.
Monongahela.
McKeesport.
Monessen.
Philadelphia No. 21.

DECEMBER.

Harrisburg.
McConnellsburg.
Huntingdon.
Lewistown.
DuBois.
Brookville.
Mifflinburg.
Braddock.
Butler.
Tarentum.
Washington.
Waynesburg.
Mt. Pleasant.
Wilkes-Barre.
Scranton.
Milford.
Carbondale.

In addition, unofficial visits were paid to the Sea View Sanatorium, Staten Island, and to the Blue Ridge Sanatorium, Pennsylvania.

The chief nurse was absent from the State from the first of March to the last of November on account of being placed in charge, by the Commissioner, of the Department's Exhibit at the Panama-Pacific International Exposition at San Francisco. Her supervision of the erection of the exhibit and her daily demonstrations undoubtedly played no small part in the winning of the International Grand Prize for Health Exhibits. The task of visiting the various dispensaries for the purpose of inspecting the nurses and their work and accompanying them upon their rounds of the patients' homes was very creditably performed during this time by the assistant chief nurse. She also organized the nursing in the typhoid epidemics at Danville and Shippensburg.

The dispensary nurses were successful in starting additional classes in domestic science among their patients. Those at Wilkes-Barre, particularly, attacked the food problem of the foreigners, eliminating fried foods almost entirely and generally reconstructing their daily menus. Special classes in sewing were continued. Some of the nurses added to their practical efficiency as well as their general culture by studying the languages of the patients with whom

they worked, i. e., Polish, Slavish, Italian and German. In the smaller dispensaries the work of the nurses has increased to include the care of all inmates of the homes of their patients, when required. There was more maternity work and infant care than formerly.

An examination of the social service report shows that there were more patients referred to the dispensaries by outside agencies and more referred by the dispensaries to other organizations than ever before. There was less money expended for the erection of tents and shacks, but more children sent to the seashore and country and to institutions while their mothers were in sanatoria. There was less money contributed for the relief of patients by county poor boards and individuals, but more by organized social and religious societies. There was nearly three times as much clothing given to patients as in the preceding year, and considerably more bedding, coal, ice, food and holiday dinners.

In 1915 the per capita cost of operation of the dispensaries was $2.92, which was a reduction of 38 cents from the year previous, when it was $3.30 per patient. The average expenditure per month was $30,353.91, while that for 1914 was $30,943.53, which amounts to an average saving of $589.62 per month, or $7,075.44 for the year. The average monthly expenditure in the first half of 1914 was $31,-434.69 and of the latter half of 1915 was $29,152.34.

The following is a condensed report of the social work done through our dispensaries during the year 1915, largely with the pecuniary aid of charitable persons and associations:

Patients Referred:—Patients sent to the dispensaries for treatment or examination through societies, hospitals, physicians, nurses, other patients, newspapers, etc.,	3,691
Patients referred for treatment to institutions other than the State sanatoria,	869
Patients referred to the various charitable organizations, where they received assistance of all kinds, rent, food, clothing, etc.,	3,064
The number of members of families of patients referred to other organizations,	910
Housing Conditions:—The number of patients whose home surroundings were improved and made more sanitary, or who were removed to more sanitary homes was,	47
Number of houses supplied with fly screens,	24
Outdoor Living:—In order to benefit the patients by outdoor living, window hoods, tents, cure chairs, blankets, cots, etc., were secured.	
The amount of money furnished to build tents for patients was,	$920 00
The number of yards of canvas furnished patients for outdoor sleeping tents was,	182
The number of patients for whom sleeping shacks were built was,	2
Seashore and Country:—The number of patients sent to the seashore or country during the summer months, through the dispensaries, was,	374
Children:—The number of children placed in institutions so that the mothers could go to sanatoria was,	6
The number of children furnished with eye glasses,	6
In one dispensary, a pension was secured for a patient amounting to twelve dollars per month.	
County Poor Boards:—Orders of relief were obtained through the county commissioners to the amount of	$7,673 51

Besides the above, many families (some receiving aid every month) were helped through this means, the amount of which is not stated. These orders were often for rent, coal, food, etc.

Organized Societies:– Our patients are aided by different societies, both church and social. The amount of money received from such societies was, ... $8,040 79

Many of our patients are aided by individuals. The amount of money received from charitable persons was, ... 1,882 47

Money thus received was expended for food, rent, and sometimes for transportation to sanatoria.

Transportation to a State Sanatorium:—Many of our patients referred to the sanatoria are given transportation by poor boards, societies or individuals. Number of patients receiving such transportation (nurse accompanying them if necessary), ... 383

A number of patients were supplied with suitable clothing to go to a sanatorium.

Employment:—The number of patients finding suitable employment through dispensaries at their discharge from the sanatorium, ... 310

MISCELLANEOUS DONATIONS.

Clothing:—The number of pieces clothing received and distributed among dispensary patients, including shoes, overshoes, underclothing, dresses, coats, etc., ... 30,398

Food:—Value of food supplies received by patients was, ... $3,440 13

Besides this, many families received food (some every week), the value of which is not stated.

Fifty-four families were supplied with Thanksgiving dinners.

Coal:—Amount of coal received by patients was three hundred sixty-one tons. In addition, many families received coal from various societies, amounts not stated. In other instances, coal was given them at half price.

Bedding and Furniture, etc.:—The number of pieces of bedding distributed was, ... 563

The number of necessary pieces of furniture supplied for patients was, ... 138

Flowers, old magazines, fruit and ice cream were given by individuals to dispensary patients.

Bolts of flannelette and muslin were donated, amounts not stated.

Servants were furnished for a number of advanced cases.

The number of ice tickets furnished during the summer months was 1,244, equivalent to five and one-half tons. Many other patients were given ice, the quantity not stated.

The number of baby outfits furnished dispensary patients was, ... 14

Christmas Entertainment:—Christmas was observed by festivities in many of our dispensaries, trees being trimmed in some of them and gifts distributed among the children.

The number of children receiving candy, oranges, toys, gloves, etc., was, ... 2,091

Number of families supplied with Christmas dinners through the dispensaries was, ... 549

In addition, charitable organizations served Christmas dinners to families unable to buy them. Canned fruit, jellies, apples, etc., were also donated.

GENERAL TABLE OF DISPENSARY OPERATIONS.

Number.	Place.	Remaining January 1.	Admitted.	Discharged.	Total treated.	Visits to Dispensary.		Remaining December 31.
						Total.	Average.	
	Dispensary System,	9,638	11,864	11,673	21,502	143,750	6.7	9,829
51	Allentown,	110	123	123	233	2,880	12.3	110
117	Ardmore,	5	17	17	22	86	3.9	5
14	Altoona,	62	131	121	193	1,125	5.8	72
87	Bangor,	19	20	17	39	482	12.4	22
103	Beaver Falls,	26	53	54	79	617	7.9	25
7	Bellefonte,	5	20	11	25	283	5.9	14
16	Berwick,	93	110	84	203	1,730	8.5	119
101	Braddock,	41	128	120	169	1,016	6.0	49
38	Bradford,	2	16	9	18	74	4.1	9
82	Bristol,	21	41	38	62	372	6.0	24
102	Brookville,	8	22	22	30	85	2.8	8
114	Brownsville,	9	20	16	29	143	4.9	13
15	Butler,	150	137	172	287	1,968	6.9	115
84	Carbondale,	37	40	27	77	661	8.6	50
4	Carlisle,	106	40	23	146	1,494	10.2	123
11	Chambersburg,	19	24	27	43	426	9.9	16
12	Chester,	254	204	240	458	2,990	6.5	218
43	Clarion,	3	13	11	16	28	1.8	5
62	Clearfield,	62	45	36	107	613	5.7	71
75	Coatesville,	36	23	28	59	752	12.7	31
74	Columbia,	16	20	11	36	363	10.1	25
70	Connellsville,	20	49	45	69	272	18.4	24
99	Corry,	11	9	6	20	188	9.4	14
27	Coudersport,							
116	Cresson,							
28	Danville,	32	31	34	63	599	9.5	29
23	Doylestown,	28	21	24	49	526	10.7	25
95	DuBois,	78	39	53	117	1,301	11.1	64
59	Dushore,	15	8	8	23	161	7.0	15
52	Easton,	41	48	59	89	496	5.6	30
8	Emporium,	14	4	3	18	395	21.9	15
3	Erie,	115	129	122	244	1,120	4.6	122
61	Everett,	20	18	18	38	225	5.9	20
72	Franklin,	78	31	31	109	873	8.0	78
60	Gettysburg,	27	21	30	48	558	11.6	18
57	Greensburg,	47	100	100	147	558	3.1	47
118	Hamburg,							
86	Hanover,	57	29	23	86	956	11.1	63
13	Harrisburg,	886	756	896	1,642	9,570	5.8	746
69	Hastings,	36	79	57	115	514	4.5	58
68	Hazleton,	61	77	84	138	1,065	7.7	54
100	Homestead,	85	111	116	196	1,856	9.4	80
18	Honesdale,	8	6	6	14	144	10.3	8
47	Huntingdon,	27	26	25	53	614	11.6	28
48	Indiana,	21	43	42	64	336	5.3	22
73	Jenkintown,	18	35	28	53	495	9.3	25
9	Johnstown,	199	250	276	449	1,979	4.4	173
115	Kane,	17	24	14	41	429	10.5	27
24	Kittanning,	41	54	50	95	1,059	11.1	45
39	Lancaster,	85	104	113	189	1,098	5.8	76
89	Lansford,	19	29	29	48	229	4.8	19
5	Lebanon,	302	182	207	484	4,408	9.1	277
10	Lewistown,	20	46	33	66	424	6.4	33
46	Lock Haven,	8	16	13	24	210	8.8	11
78	Lykens,	15	16	22	31	322	10.4	9
45	Mauch Chunk,	9	9	12	18	125	6.4	6
41	Meadville,	16	18	18	34	219	6.4	16
30	Meyersdale,	15	27	21	42	290	7.0	21
29	Mifflinburg,		1	1	1	1	1.0	
26	Mifflintown,	133	42	42	175	768	4.3	133
19	Milford,							
92	Milton,	40	25	26	65	853	1.31	39
88	Monessen,	32	83	84	115	625	5.4	31
55	Monongahela,	25	60	70	85	389	4.6	15
119	Mont Alto,							
49	Montrose,	29	7	19	36	265	7.4	17
71	Mount Carmel,	417	408	374	825	8,685	10.5	451
77	Mount Pleasant,	13	13	15	26	240	9.2	11
17	McConnellsburg,							
81	McKeesport,	80	99	104	179	1,500	8.3	75

GENERAL TABLE OF DISPENSARY OPERATIONS—Continued.

Number.	Place.	Remaining January 1.	Admitted.	Discharged.	Total treated.	Visits to Dispensary.		Remaining December 31.
						Total.	Average.	
113	Nanticoke,	35	100	55	135	1,031	7.6	80
*25	New Bloomfield,	13	5	8	18	123	6.8	10
35	New Castle,	95	135	115	230	2,569	11.1	115
31	Norristown,	43	47	56	90	712	7.9	34
32	Oil City,	167	71	61	238	2,431	10.2	177
21	Philadelphia (Poplar Street),	503	1,325	1,322	1,828	6,356	3.5	506
931	Philadelphia (S. Twenty-fourth St.)	332	1,169	1,088	1,501	7,468	5.0	413
107	Philadelphia (Frankford),	176	453	432	629	5,104	8.1	197
80	Philipsburg,	91	44	31	135	1,362	10.1	104
76	Phoenixville,	55	45	45	100	962	9.6	55
20	Pittsburgh,	793	902	862	1,695	8,980	5.3	833
94	Pittston,	206	88	103	294	1,769	6.0	191
106	Pottstown,	13	14	17	27	240	9.0	10
66	Pottsville,	169	141	125	310	1,895	5.8	185
64	Punxsutawney,	25	29	31	54	367	6.8	22
37	Reading,	45	188	143	236	2,048	8.7	93
112	Renovo,	21	19	21	40	565	14.1	19
42	Ridgway,	41	22	29	63	433	6.9	34
22	Rochester,	20	47	40	67	628	9.4	27
40	Scranton,	282	258	227	541	3,027	5.6	314
50	Selinsgrove,	12	13	12	25	216	8.6	13
53	Shamokin,	67	45	47	112	850	7.6	65
36	Sharon,	77	102	115	179	845	4.7	64
85	Shenandoah,	477	346	382	823	4,705	5.7	441
98	South Bethlehem,	98	108	136	206	1,386	6.7	70
65	Stroudsburg,		2	1	2	15	7.5	1
110	Sunbury,	76	27	33	103	741	7.2	70
97	Susquehanna,	10	7	8	17	241	14.2	9
91	Tamaqua,	10	21	18	31	232	7.5	13
111	Tarentum,	118	103	70	221	1,585	7.2	151
34	Tionesta,							
90	Titusville,	12	13	12	25	347	13.9	13
44	Towanda,	62	73	75	135	618	4.6	60
56	Tunkhannock,	56	39	36	95	777	8.2	59
79	Tyrone,	14	5	8	19	216	11.4	11
67	Uniontown,	23	57	60	80	421	5.4	20
54	Warren,	17	19	15	36	295	8.2	21
105	Washington,	99	66	78	165	1,368	7.9	87
108	Waynesboro,	45	59	60	104	988	9.5	44
63	Waynesburg,	4	8	5	12	148	12.3	7
58	Wellsboro,	28	22	33	50	65	1.3	17
6	West Chester,	10	7	9	17	190	11.2	8
96	West Fairview,	31	12	9	43	416	9.7	34
1	Wilkes-Barre,	447	587	502	1,034	5,670	5.5	532
109	Wilkinsburg,	114	174	156	288	2,180	7.6	132
33	Williamsport,	194	202	220	396	3,944	9.9	176
2	York,	84	215	202	299	2,233	7.5	97

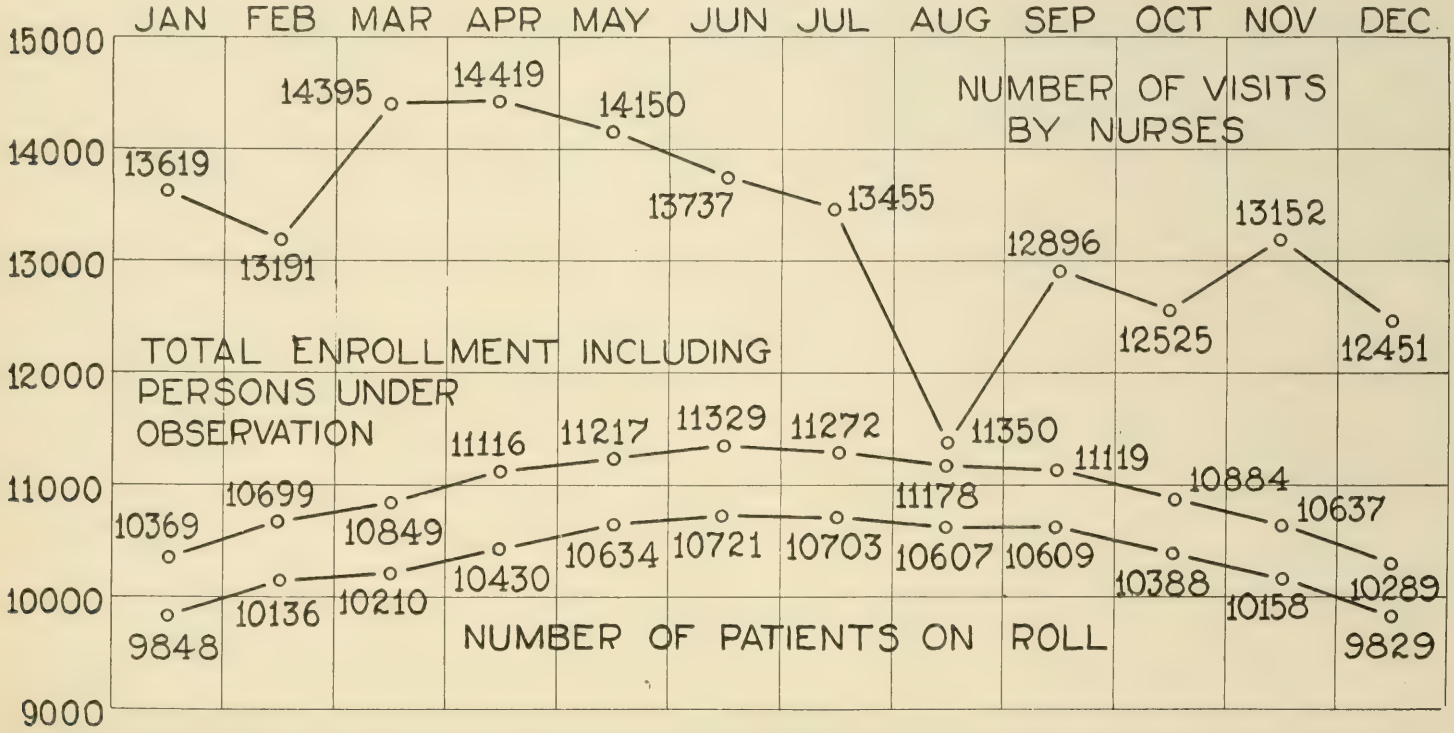
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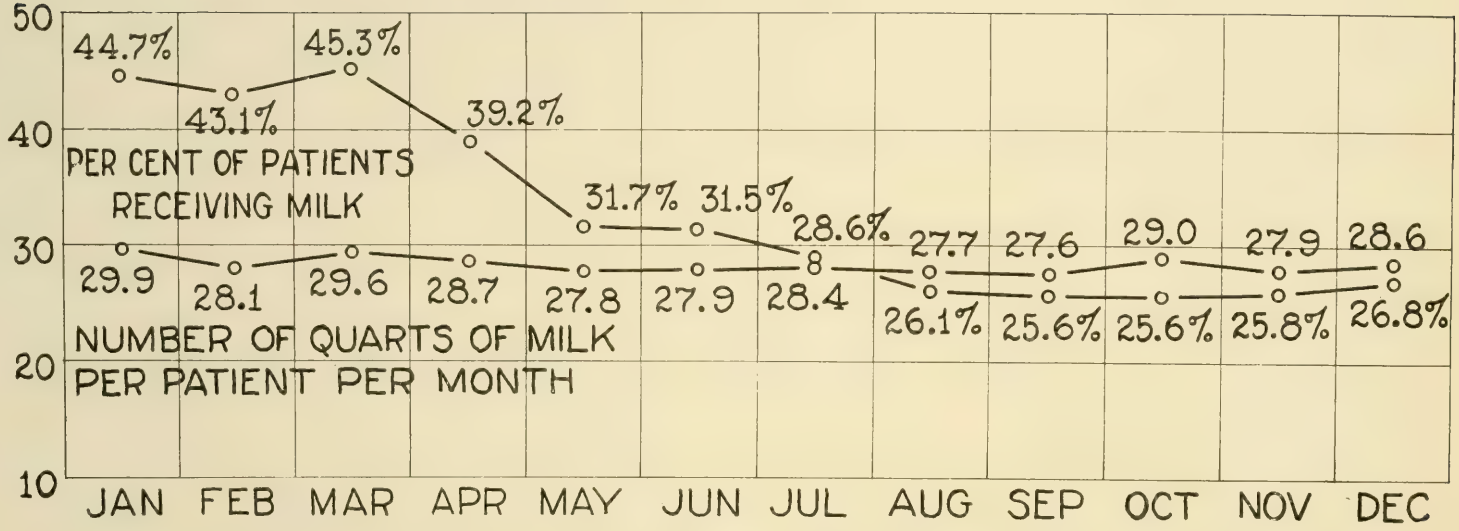
SUMMARY OF DISPENSARY WORK IN 1915, BY MONTHS.

	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
Number visits by nurses,	13,619	13,191	14,395	14,419	14,150	13,737	13,455	11,350	13,036	12,525	13,152	12,451
*Total enrollment, including undiagnosed cases,	10,368	10,698	10,851	11,117	11,219	11,334	11,277	11,186	11,126	10,884	10,637	10,288
Percentage patients receiving milk,	45	43	45	39	32	32	29	26	26	26	26	27
Number quarts milk each month for each patient,	30	28	30	29	28	28	28	28	28	29	28	29
Number dispensary visits for each physician,	62	60	71	67	63	64	61	57	57	57	56	57
Number visits to patients for each nurse,	113	110	119	121	120	118	116	99	112	111	116	116
Percentage patients receiving medicine,	10	10	11	8	8	7	7	7	7	7	7	8
†Percentage tuberculosis patients showing increased weight,	33	31	35	27	29	27	27	30	30	36	34	31

*Includes persons under observation or applicants found on examination to be non-tuberculous. There were 6,010 such cases during the year, a monthly average of 501.

†Obtained by comparing the number of increases in weight with the number of patients enrolled at the end to the month. The relation of these percentages is shown in the cross section charts.


JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
15000
14000
13000
12000
11000
10000
9000
NUMBER OF VISITS BY NURSES
13619
13191
14395
14419
14150
13737
13455
11350
12896
12525
13152
12451
TOTAL ENROLLMENT INCLUDING PERSONS UNDER OBSERVATION
10369
10699
10849
11116
11217
11329
11272
11178
11119
10884
10637
10289
NUMBER OF PATIENTS ON ROLL
9848
10136
10210
10430
10634
10721
10703
10607
10609
10388
10158
9829


50
40
30
20
10
44.7%
43.1%
45.3%
39.2%
31.7%
31.5%
28.6%
27.7
27.6
29.0
27.9
28.6
PER CENT OF PATIENTS
RECEIVING MILK
29.9
28.1
29.6
28.7
27.8
27.9
28.4
26.1%
25.6%
25.6%
25.8%
26.8%
NUMBER OF QUARTS OF MILK
PER PATIENT PER MONTH
JAN
FEB
MAR
APR
MAY
JUN
JUL
AUG
SEP
OCT
NOV
DEC

NUMBER OF DISPENSARY VISITS PER PHYSICIAN
67.3
59.8
71.1
65.8
62.5
63.9
61.2
56.6
57.7
57.7
56.0
57.9
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
NUMBER OF VISITS TO PATIENTS AT THEIR HOMES PER NURSE
112.5
109.0
118.9
121.1
119.9
118.4
115.9
98.6
112.1
110.8
116.4
110.1
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
PER CENT OF PATIENTS RECEIVING MEDICINE
9.9
10.4
10.8
8.2
8.1
7.1
6.9
6.6
7.1
7.3
6.9
7.9
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
PER CENT OF PATIENTS SHOWING INCREASED WEIGHT
33.4
31.4
35.3
26.6
29.0
27.2
27.1
29.8
30.4
35.9
34.3
30.5
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

CLASSIFICATION, SEX AND SOCIAL CONDITION OF CASES ADMITTED AND DISCHARGED DURING 1915.

Classification.	Sex.	Total.	Single.	Married.	Widowed.	Divorced.	Separated.
Total,		6,360	3,047	2,798	287	29	199
Incipient,	M.	769	480	268	10	4	7
	F.	813	458	292	57	4	22
Moderately advanced,	M.	1,336	641	601	44	8	42
	F.	911	390	408	65	6	42
Far advanced,	M.	1,666	724	806	74	6	56
	F.	864	353	423	57	1	30
Unstated,	M.	1	1				
	F.						

CLASSIFICATION, SEX AND COLOR OF CASES ADMITTED AND DISCHARGED DURING 1915.

Classification.	Sex.	Total.	Color.		
			White.	Black.	Chinese.
Total,		6,360	6,062	297	1
Incipient,	M.	769	745	24	
	F.	813	781	32	
Moderately advanced,	M.	1,336	1,290	45	1
	F.	911	865	46	
Far advanced,	M.	1,666	1,570	96	
	F.	864	810	54	
Unstated,	M.	1	1		
	F.				

CLASSIFICATION, SEX AND AGE OF CASES ADMITTED AND DISCHARGED DURING 1915.

Classification.	Sex.	Total.	Ages in Years.											
			-5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-59	60+	Unstated.
Total,		6,360	77	272	375	726	1,134	1,009	831	684	477	321	339	114	1
Incipient,	M.	769	15	88	102	101	124	106	82	62	38	21	27	3	
	F.	813	24	88	118	120	142	107	71	72	31	20	13	7	
Moderately advanced,	M.	1,336	13	27	53	118	232	210	204	154	127	86	82	30	
	F.	911	4	35	55	128	184	148	118	98	62	25	44	9	1
Far advanced,	M.	1,666	13	13	23	129	244	275	253	224	163	132	145	52	
	F.	864	8	20	24	130	208	163	103	74	56	37	28	13	
Unstated,	M.	1		1											
	F.														

Average Age in Years.

All ages,		29.0
Incipient,	M.	23.9
	F.	22.6
Moderately advanced,	M.	31.2
	F.	27.5
Far advanced,	M.	34.1
	F.	28.4
Unstated,	M.	4.9
	F.	
All males,		31.0
All females,		26.2

CLASSIFICATION, SEX AND FAMILY HISTORY OF TUBERCULOSIS FOR THE CASES ADMITTED AND DISCHARGED DURING 1915.

Classification.	Incipient.		Moderately Advanced.		Far Advanced.		Not Stated.		Total Cases.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
No history,	434	336	891	426	1,146	481	1	------	3,715
Tuberculosis in mother or mother's family only,	79	113	93	104	128	90	------	------	607
Tuberculosis in father or father's family only,	59	81	69	71	87	45	------	------	412
Tuberculosis in brothers or sisters only,	58	73	103	82	152	79	------	------	547
Tuberculosis in children or consort's family only,	25	48	44	45	51	30	------	------	243
Tuberculosis in two or more of above classes,	112	161	132	181	99	132	------	------	817
Unstated,	2	1	4	2	3	7	------	------	19
Total cases,	769	813	1,336	911	1,666	864	1	------	6,360

CLASSIFICATION, SEX AND CONTACTS OF CASES ADMITTED AND DISCHARGED DURING 1915.

Classification.	Sex.	Total.	Known Contacts.				*Unstated.	No Contact.	House Contact.
			Family.	Friends.	Work.	Other.			
Total,		6,360	2,260	418	443	44	16	3,172	7
Incipient,	M.	769	295	49	45	2	2	376	----------
	F.	813	406	80	27	--------	--------	295	5
Moderately advanced.	M.	1,336	377	90	117	7	4	739	2
	F.	911	404	64	46	6	2	389	----------
Far advanced,	M.	1,660	450	70	164	20	3	959	----------
	F.	864	327	65	44	9	5	414	----------
Unstated,	M.	1	1	----------	--------	--------	--------	----------	----------
	F.	--------	----------	----------	--------	--------	--------	----------	----------

*No direct contact with a tuberculous person is known to patient.

SOCIAL STATISTICS CONCERNING THE 11,665 CASES ADMITTED AND DISCHARGED.

Table Showing Number of Persons Compared with Number of Rooms Occupied.

Rooms in Each Dwelling.	Number in Family.										Total Families.
	1	2	3	4	5	6	7	8	9 and Over.	Not Stated.	
1,	170	294	257	176	135	61	20	8	9	1	1,231
2,	12	273	540	705	595	503	206	174	137	4	3,249
3,	5	133	402	658	759	729	529	381	434	5	4,035
4,	4	52	121	217	261	315	223	225	300	1	1,719
5 and over,	4	17	56	74	120	144	147	137	234	4	937
Unstated,	------	1	2	2	4	3	3	------	4	475	494
Total,	295	770	1,378	1,832	1,874	1,755	1,228	925	1,118	490	11,665

Total number of rooms occupied by families of 11,175 patients the number of whose rooms is given	31,347	rooms
Membership of families of 11,175 patients, 5.3 members to the family,	59,964	persons
Average number of persons to each room,	1.9	persons
Average number o frooms to each family of 5.3 members,	2.9	rooms

CHARACTER OF DWELLINGS OCCUPIED BY CASES ADMITTED AND DISCHARGED DURING 1915.

Classification.	Sex.	Total.	Private house.	Apartment.	Tenement.	Boarding house.	Institution.	Unstated.	Stable.
Total,	------	6,360	5,141	650	316	128	114	10	1
Incipient,	M.	769	632	74	37	19	6	1	------
	F.	813	693	75	25	4	15	1	------
Moderately advanced,	M.	1,336	1,065	137	79	27	26	2	------
	F.	911	761	87	42	3	16	2	------
Far Advanced,	M.	1,666	1,252	204	99	69	38	3	1
	F.	864	738	72	34	6	13	1	------
Unstated,	M.	1	--------	1	------	------	------	------	------
	F.	--------	--------	------	------	------	------	------	------

SOCIAL STATISTICS CONCERNING THE 11,665 CASES ADMITTED AND DISCHARGED.

Number of persons in the family.

295	families had 1 member.
770	families had 2 members.
1,378	families had 3 members.
1,832	families had 4 members.
1,874	families had 5 members.
1,755	families had 6 members.
1,228	families had 7 members.
925	families had 8 members.
1,118	families had 9 members or over.
490	families, members not stated.

Average number persons to one family, ... 5.3
Total persons in 11,175 families, ... 59,964

SOCIAL STATISTICS CONCERNING THE 11,665 CASES ADMITTED AND DISCHARGED.

Number of rooms to a family.

1,231	families lived in 1 room.
3,249	families lived in 2 rooms.
4,035	families lived in 3 rooms.
1,719	families lived in 4 rooms.
613	families lived in 5 rooms.
218	families lived in 6 rooms.
57	families lived in 7 rooms.
31	families lived in 8 rooms.
18	families lived in 9 rooms or over.
494	families lived in rooms, number not stated.

Average number of rooms, ... 2.9

FINANCIAL STATISTICS CONCERNING THE 11,665 CASES ADMITTED AND DISCHARGED.

Family Income: Monthly.

Number of Families.	Income.
84,	Not Stated.
3,205,	No income except charity.
29,	Less than $5.00 per month.
179,	$5.00 to $10.00 per month.
376,	$10.00 to $15.00 per month.
323,	$15.00 to $20.00 per month.
804,	$20.00 to $25.00 per month.
499,	$25.00 to $30.00 per month.
689,	$30.00 to $35.00 per month.
624,	$35.00 to $40.00 per month.
1,292,	$40.00 to $45.00 per month.
639,	$45.00 to $50.00 per month.
887,	$50.00 to $55.00 per month.
174,	$55.00 to $60.00 per month.
765,	$60.00 to $65.00 per month.
129,	$65.00 to $70.00 per month.
201,	$70.00 to $75.00 per month.
766,	$75.00 and over per month.

Total number of families, ... 8,376
Average number of persons to one family, ... 5.3
Average monthly income of family, ... $42 83
Average monthly income per capita, ... 6 08

Statistics as to income based upon amount reported by patients checked by investigation of visiting nurses.

SEX AND CLASSIFICATION OF DISPENSARY CASES ADMITTED PRIOR TO 1915 AND DISCHARGED DURING THE YEAR.

Sex.	Total.	Incipient.	Moderately Advanced.	Far Advanced.	Unstated.
Total,	5,305	2,353	1,774	1,178	
Males,	2,376	993	776	607	
Females,	2,929	1,360	998	571	

ADMITTED AND DISCHARGED DURING 1915.

Sex.	Total.	Incipient.	Moderately Advanced.	Far Advanced.	Unstated.
Total,	6,360	1,582	2,247	2,530	1
Males,	3,772	769	1,336	1,666	1
Females,	2,588	813	911	864	

CLASSIFICATION, SEX AND NATIVITY OF CASES ADMITTED AND DISCHARGED DURING 1915.

Classification.	Sex.	Native.	Total foreign.	Foreign Nativity.									
				Great Britain.	Ireland.	Germany.	Italy.	Austro-Hungary.	Russia.	Poland.	Scandinavian.	Other.	Unstated.
Total,		4,342	2,108	85	163	108	270	618	488	77	41	168	
Incipient,	M.	538	231	3	10	10	45	71	64	4	3	21	
	F.	598	215	11	15	18	23	55	70	7	6	10	
Moderately advanced.	M.	807	529	22	40	22	71	159	132	23	10	50	
	F.	693	218	12	13	9	30	56	68	8	3	19	
Far advanced,	M.	1,067	599	24	53	39	81	193	118	27	11	53	
	F.	638	226	13	32	10	20	84	36	8	8	15	
Unstated,	M.	1											
	F.												

Total:

Native,	68.2 per cent.
Foreign,	31.7 per cent.

SEX, ADMISSION AND DISCHARGE—CLASSIFICATION OF CASES ADMITTED PRIOR TO JANUARY 1, 1915, AND DISCHARGED DURING 1915.

Classification on Admission.	Sex.	Total.	Condition on Discharge.							
			Cured.	Apparently cured.	Arrested.	Apparently arrested.	Improved.	Unimproved.	Dead from tuberculosis.	Dead from other causes.
Total,		5,305	39	92	123	864	2,568	1,174	443	2
Incipient,	M.	993	13	31	26	198	559	146	19	1
	F.	1,360	16	29	39	299	730	223	24	------
Moderately advanced,	M.	776	4	12	21	95	383	199	62	------
	F.	998	3	16	30	156	498	240	55	------
Far advanced,	M.	607	3	------	1	46	202	217	138	------
	F.	571	------	4	6	70	196	149	145	1

SEX, ADMISSION AND DISCHARGE—CLASSIFICATION OF CASES ADMITTED AND DISCHARGED DURING 1915.

Classification on Admission.	Sex.	Total.	Condition on Discharge.							
			Cured.	Apparently Cured.	Arrested.	Apparently arrested.	Improved.	Unimproved.	Dead from tuberculosis.	Dead from other causes.
Total,		6,360	2	1	9	105	2,291	3,172	767	13
Incipient,	M.	769	1	------	1	24	417	314	7	5
	F.	813	1	------	1	38	408	349	16	------
Moderately advanced,	M.	1,336	------	------	3	16	501	722	92	2
	F.	911	------	------	3	15	396	441	56	------
Far advanced,	M.	1,666	------	1	1	4	367	900	388	5
	F.	864	------	------	------	8	202	445	208	1
Bone tuberculosis,	M.	1	------	------	------	------	------	1	------	------
	F.	------	------	------	------	------	------	------	------	------

SEX, CLASSIFICATION AND NATURE OF DISCHARGE—CASES ADMITTED PRIOR TO JANUARY 1, 1915, AND DISCHARGED DURING 1915.

Classification.	Sex.	Total.	Moved.	Voluntary Discharge.	Referred to		Disobedience.	Died of tuberculosis.	Died of other causes.	Disease arrested.
					Sanatorium.	*Family physician.				
Total,		5,305	638	2,316	605	132	85	443	2	1,054
Incipient,	M.	993	119	450	100	29	16	19	1	259
	F.	1,360	170	674	86	28	18	24	------	360
Moderately advanced,	M.	776	92	344	121	18	15	62	------	124
	F.	998	118	517	84	25	19	55	------	189
Far advanced,	M.	607	97	164	133	14	14	138	------	47
	F.	571	72	167	81	18	12	145	1	75

*Improved financial circumstances enabled these patients to employ their own physicians.

SEX, CLASSIFICATION AND NATURE OF DISCHARGE OF CASES ADMITTED AND DISCHARGED DURING 1915.

Classification.	Sex.	Total.	Moved.	Voluntary discharge.	Referred to		Disobedience.	Died of tuberculosis.	Died of other causes.	Disease arrested.
					Sanatorium.	*Family physician.				
Total,		6,360	941	1,000	3,199	173	164	767	13	103
Incipient,	M.	769	134	212	343	24	20	7	5	24
	F.	813	140	261	298	38	24	16	------	36
Moderately advanced,	M.	1,336	196	173	788	29	40	92	2	16
	F.	911	124	176	469	39	33	56	------	14
Far advanced,	M.	1,666	232	104	885	22	25	388	5	5
	F.	864	115	73	416	21	22	208	1	8
Bone,	M.	1	------	1	------	------	------	------	------	------
	F.	------	------	------	------	------	------	------	------	------

*Improved financial circumstances enabled these patients to employ their own physicians.

CLASSIFICATION, SEX AND NUMBER OF DISPENSARY VISITS WHILE UNDER TREATMENT OF THE CASES ADMITTED PRIOR TO JANUARY 1, 1915, AND DISCHARGED DURING 1915.

Classification.	Sex.	Total Cases.	Dispensary Visits.										
			1-12	13 24	25 30	31 36	37 42	42 48	49 54	55 60	61+	No Visits.	Unstated.
Total,		5,365	2,958	968	287	213	156	132	103	70	394	23	1
Incipient,	M.	993	555	179	50	43	34	25	19	14	74		
	F.	1,360	643	303	84	53	43	39	29	27	137	1	1
Moderately advanced,	M.	776	473	142	40	39	12	17	19	4	29	1	
	F.	998	518	206	60	53	34	30	14	11	72		
Far advanced,	M.	607	439	67	24	10	11	10	8	4	26	8	
	F.	571	330	71	29	15	22	11	14	10	56	13	
Unstated,	M.												
	F.												

AVERAGE NUMBER DISPENSARY VISITS OF THESE CASES.

All classes,		19.4
Incipient,	M.	18.5
	F.	23.4
Moderately advanced,	M.	15.6
	F.	20.1
Far advanced,	M.	14.1
	F.	20.6
Unstated,	M.	----
	F.	----

All males,	16.5
All females,	21.7

CLASSIFICATION, SEX AND NUMBER OF DISPENSARY VISITS OF CASES ADMITTED AND DISCHARGED DURING 1915.

Classification.	Sex	Total Cases.	Number of Visits.																									
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Over 24	No Visits.
Total,		6,360	2,283	1,209	789	571	429	282	169	137	95	69	54	40	17	22	13	19	9	17	7	7	5	4	2	4	6	101
Incipient,	M.	769	222	141	112	78	62	42	22	19	19	13	12	4	5	2	4	4	---	4	---	1	---	1	---	---	1	1
	F.	813	261	153	109	74	60	38	34	21	10	12	8	9	2	2	3	4	3	4	2	---	1	1	---	1	1	---
Moderately advanced,	M.	1,336	418	281	176	142	89	66	36	39	21	20	11	9	2	5	2	4	---	---	1	---	3	---	---	2	1	8
	F.	911	301	165	117	77	63	51	28	23	21	12	10	8	5	7	2	2	2	3	1	3	1	1	1	---	2	5
Far advanced,	M.	1,666	694	302	178	156	107	64	33	26	18	9	7	6	2	2	1	4	2	5	2	2	---	1	1	1	1	42
	F.	864	386	167	97	44	48	21	16	9	6	3	6	4	1	4	1	1	2	1	1	1	---	---	---	---	---	45
Unstated,	M.	1	1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	F.	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

AVERAGE NUMBER DISPENSARY VISITS OF THESE CASES.

Total all classes,		3.3
Incipient,	M.	3.7
	F.	4.9
Moderately advanced,	M.	3.4
	F.	3.7
Far advanced,	M.	2.8
	F.	2.6
Unstated,	M.	1.0
	F.	---
All males,		3.2
All females,		3.7

CLASSIFICATION, SEX AND DISPENSARY MONTHS (TIME UNDER TREATMENT) FOR CASES ADMITTED PRIOR TO JANUARY 1, 1915, AND DISCHARGED DURING 1915.

Classification.	Sex.	Total Cases.	Months.								
			-3	3-6	6 9	9-12	12-18	18-24	24-36	36-48	48+
Total,		5,305	228	595	770	684	966	626	676	340	420
Incipient,	M.	993	29	99	147	138	181	116	133	62	88
	F.	1,360	27	108	161	157	275	146	218	103	165
Moderately advanced,	M.	776	45	101	131	91	152	103	95	42	16
	F.	998	22	100	126	150	193	162	121	63	61
Far advanced,	M.	607	74	103	123	71	82	46	54	33	21
	F.	571	31	84	82	77	83	53	55	37	69
Unstated,	M.										
	F.										

AVERAGE TIME UNDER TREATMENT BY MONTHS FOR THESE CASES.

Incipient,	M.	29.7	Far advanced,	M.	13.8	All classes,	20.8
	F.	22.5		F.	20.0		
Moderately advanced,	M.	15.6	Unstated,	M.	----	All males,	21.0
	F.	18.5		F.	----	All females,	20.6

CLASSIFICATION, SEX AND DISPENSARY MONTHS (TIME UNDER TREATMENT) OF CASES ADMITTED AND DISCHARGED DURING 1915.

Classification.	Sex.	Total Cases.	Months.											
			1	2	3	4	5	6	7	8	9	10	11	12
Total,		6,360	2,271	1,634	737	554	365	328	189	117	74	44	31	16
Incipient,	M.	769	221	159	100	85	60	58	31	23	19	6	6	1
	F.	813	213	152	102	88	79	66	55	21	17	12	5	3
Moderately advanced,	M.	1,336	493	400	119	119	69	60	30	18	11	6	6	5
	F.	911	279	238	129	78	56	47	32	19	12	10	8	3
Far advanced,	M.	1,666	766	449	158	112	59	62	25	16	8	7	3	1
	F.	864	299	236	129	71	42	35	16	20	7	3	3	3
Unstated,	M.	1				1								
	F.													

AVERAGE TIME UNDER TREATMENT BY MONTHS FOR THESE CASES.

Incipient,	M.	3.3	Far advanced,	M.	2.3	All classes,		2.8
	F.	3.5		F.	2.7			
Moderately advanced,	M.	2.6	Unstated,	M.	4.0	All males,		2.6
	F.	3.0		F.	---	All females,		3.1

GAIN OR LOSS IN WEIGHT IN CASES ADMITTED AND DISCHARGED DURING 1915.

Classification.	Sex.	Total.	Gain.	Average gain.	Loss.	Average loss.	Weight stationary.	Only one weight recorded.	Too ill to be weighed.
Total,		5,580	1,843	3.5	1,340	3.7	496	1,881	20
Incipient,	M.	757	323	3.7	148	3.1	68	218	
	F.	797	315	3.9	152	3.0	74	256	
Moderately advanced,	M.	1,242	415	2.3	328	3.8	114	382	3
	F.	855	303	3.5	192	3.4	85	270	5
Far advanced,	M.	1,273	323	4.0	364	4.3	107	474	5
	F.	655	164	3.4	156	3.8	48	280	7
Unstated,	M.	1						1	
	F.								

(Deaths not included.)

CLASSIFICATION, SEX AND FAMILY HISTORY OF TUBERCULOSIS FOR THE CASES ADMITTED AND DISCHARGED DURING 1915. TUBERCULOUS RELATIVES REPORTED.

Classification.	Incipient.		Moderately Advanced.		Far Advanced.		No History.		Total relatives.
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	
Father,	98	106	109	94	105	70			582
Brother,	70	86	111	100	138	84			589
Paternal aunt,	24	52	21	58	20	12			187
Paternal uncle,	21	33	28	35	33	18			168
Paternal grandfather,	9	11	5	12	5	5			47
Paternal grandmother,	8	16	9	14	12	13			72
Consort,	21	56	33	55	59	36			260
Consort's family,	14	18	18	36	32	12			130
Mother,	108	151	123	135	121	133			771
Sister,	65	117	114	101	126	109			632
Maternal aunt,	50	68	38	65	32	49			302
Maternal uncle,	24	38	31	42	37	27			199
Maternal grandfather,	7	26	14	26	11	11			95
Maternal grandmother,	24	33	27	36	20	11			151
Children,	16	25	27	33	25	18			144
Total cases,	559	836	708	842	776	608			4,329

CLASSIFICATION, SEX AND NUMBER OF TUBERCULOUS RELATIVES OF CASES GIVING TUBERCULOUS FAMILY HISTORY AMONG THE CASES ADMITTED AND DISCHARGED DURING 1915.

Classification.	Sex.	Total.	Number Tuberculous Relatives.									
			1	2	3	4	5	6	7	8	9	11
Total,		2,626	1,532	687	266	94	25	12	6	2	1	1
Incipient,	M.	333	176	95	44	11	2	2	2	1	------	------
	F.	476	254	121	72	21	4	2	1	1	------	------
Moderately advanced	M.	441	265	113	44	13	5	------	1	------	------	------
	F.	483	263	125	47	26	12	6	2	------	1	1
Far advanced,	M.	517	367	109	27	12	2	------	------	------	------	------
	F.	376	207	124	32	11	------	2	------	------	------	------

NATIVITY OF PATIENTS ADMITTED AND DISCHARGED DURING 1915.

(a) Native:			
1. Males,	2,413		
2. Females,	1,929		
		4,342	
(b) Foreign:			
1. Males,	1,359		
2. Females,	659		
		2,018	
			6,360

NATIVITY OF PATIENTS ADMITTED PRIOR TO 1915 AND DISCHARGED DURING 1915.

(a) Native:			
1. Males,	1,762		
2. Females,	2,408		
		4,170	
(b) Foreign:			
1. Males,	614		
2. Females,	521		
		1,135	
			5,305

Summary:	
All males,	6,148
All females,	5,517
Total cases,	11,665

SUMMARY OF PATIENTS' HISTORIES.

Previous Diseases.		Symptoms.		Complications.	
Gout,	1,585	Cough,	10,772	Goitre,	198
Pneumonia,	2,551	Dysponea,	7,831	Glands,	742
LaGrippe,	2,103	Pain,	7,104	Bones,	90
Diphtheria,	994	Weakness,	80	Ischio-rectal abscess,	25
Measles,	7,880	Fever,	5,731	Enteritis,	55
Pleurisy,	1,996	Night sweats,	4,903	Arthritis,	37
Whooping cough,	4,643	Appetite,	4,674	Nervous,	35
Scarlet fever,	886	Indigestion,	713	Syphilis,	64
Typhoid,	1,645	Hemorrhage,	3,290	Malignant,	10
Colds,	7,249			Heart,	301
				Larynx,	505
Not stated,	21	Not stated,	44	Pneumothorax,	2
				Hydrothorax,	3
No disease,	963	No symptoms,	279	Pyothorax,	3

Habits.		Sputum.			
Not stated,	4	Total.	Positive.	Negative.	Not Examined
No habits,	8,330				
Alcohol,	1,989	11,665	1,319	2,170	8,176
Tobacco,	3,103				
Drugs,	30				

REPORT OF TREATMENT OF TUBERCULOSIS WITH DIXON'S FLUID IN DISPENSARIES IN 1915.

Dispensary No.	Dispensary.	January.					February.					March.					April.					May.					June.				
		New cases.	Total treated.	Extract.	Suspension.	Total doses.	New cases.	Total treated.	Extract.	Suspension.	Total doses.	New cases.	Total treated.	Extract.	Suspension.	Total doses.	New cases.	Total treated.	Extract.	Suspension.	Total doses.	New cases.	Total treated.	Extract.	Suspension.	Total doses.	New cases.	Total treated.	Extract.	Suspension.	Total doses.
1	Wilkes-Barre,	1	3	3	0	8	2	5	2	3	7	1	6	2	4	14	0	5	2	3	10	6	10	2	8	18	3	13	3	10	20
2	York,	1	2	2	0	4	1	2	2	0	3	1	2	2	0	4	1	3	3	0	5	0	2	2	0	5	0	1	1	0	4
4	Carlisle,	0	1	1	0	2	0	1	1	0	2	0	1	1	0	2	1	2	2	0	5	1	3	3	0	5	1	3	3	0	4
6	West Chester,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	2	0	4
9	Johnstown,	1	2	2	0	5	2	2	2	0	6	0	1	1	0	4	0	1	1	0	3	0	1	1	0	3	0	0	0	0	0
11	Chambersburg,	0	0	0	0	0	0	0	0	0	0	0	1	1	0	4	0	4	4	0	16	0	5	5	0	14	0	5	5	0	15
12	Chester,	1	1	0	1	3	0	1	0	1	2	0	1	0	1	1	0	1	0	1	3	0	1	0	1	3	1	2	0	2	4
13	Harrisburg,	1	11	11	0	29	1	12	12	0	24	5	17	17	0	50	4	20	20	0	56	5	26	26	0	46	1	23	23	0	60
14	Altoona,	1	9	9	0	18	0	7	7	0	17	0	7	7	0	14	0	2	2	0	3	1	5	5	0	8	0	4	4	0	9
15	Butler,	3	10	10	0	26	2	11	11	0	29	2	10	10	0	32	1	10	10	0	33	1	9	9	0	25	2	10	10	0	25
16	Berwick,	1	7	0	7	26	0	6	0	6	22	0	5	0	5	18	1	6	0	6	24	0	5	0	5	18	0	5	0	5	15
20	Pittsburgh,	0	13	7	0	39	1	12	8	4	30	1	9	7	2	23	1	9	9	0	18	2	10	10	0	17	1	9	9	0	21
22	Rochester,	1	3	3	0	6	0	3	3	0	9	0	3	3	0	10	0	2	2	0	2	0	0	0	0	0	0	0	0	0	0
24	Kittanning,	4	7	7	0	17	5	11	11	0	27	1	13	13	0	43	2	15	15	0	45	0	11	11	0	32	0	8	8	0	20
26	Mifflintown,	0	4	4	0	12	0	4	4	0	10	0	4	4	0	11	0	4	4	0	13	0	4	4	0	10	0	4	4	0	12
28	Danville,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	5	1	2	2	0	5
33	Williamsport,	0	8	8	0	26	0	10	10	0	30	1	11	11	0	34	0	12	12	0	27	2	15	15	0	40	1	10	10	0	27
35	New Castle,	1	7	7	0	29	0	7	7	0	24	2	8	8	0	23	0	3	3	0	9	3	5	5	0	14	0	4	4	0	15
37	Reading,	1	7	5	2	16	0	7	5	2	20	0	7	5	2	20	0	8	6	2	15	0	5	4	1	7	0	4	3	1	12
39	Lancaster,	1	8	8	0	15	1	9	9	0	18	1	11	11	0	25	0	9	9	0	18	0	6	6	0	11	0	7	7	0	15
47	Huntingdon,	0	6	6	0	22	0	6	6	0	17	0	6	6	0	21	2	8	8	0	24	1	8	8	0	22	3	12	10	2	32
48	Indiana,	0	6	5	1	18	0	4	3	1	12	0	5	4	1	20	0	5	4	1	19	0	4	3	1	10	0	4	3	1	17
50	Selinsgrove,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	4
51	Allentown,	0	2	2	0	6	0	2	2	0	5	0	2	2	0	4	0	1	1	0	1	2	2	2	0	5	0	3	3	0	5
52	Easton,	0	1	1	0	4	0	1	1	0	3	0	1	1	0	4	1	1	1	0	4	0	1	1	0	2	0	1	1	0	3
53	Shamokin,	0	9	9	0	26	1	7	5	2	23	1	7	5	2	26	2	9	5	4	27	0	7	3	4	24	1	7	2	5	29
54	Warren,	0	1	0	1	4	0	1	0	1	4	0	1	0	1	4	0	1	0	1	4	0	1	0	1	4	2	3	0	3	10
55	Monongahela,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
64	Punxsutawney,	0	3	3	0	6	0	3	3	0	6	0	3	3	0	8	0	3	0	3	7	1	4	4	0	10	0	4	4	0	8
66	Pottsville,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3	0	3	3	6	6	0	18
69	Hastings,	0	1	1	0	2	0	1	1	0	2	1	2	2	0	8	0	2	2	0	4	1	3	3	0	5	0	3	3	0	13
71	Mount Carmel,	2	35	35	0	69	1	34	34	0	60	0	29	29	0	54	0	29	29	0	53	0	32	32	0	52	0	29	20	0	44

REPORT OF TREATMENT OF TUBERCULOSIS WITH DIXON'S FLUID IN DISPENSARIES IN 1915—Continued.

Dispensary No.	Dispensary.	January.					February.					March.					April					May.					June.				
		New cases.	Total treated.	Extract.	Suspension.	Total doses.	New cases.	Total treated.	Extract.	Suspension.	Total doses.	New cases.	Total treated.	Extract.	Suspension.	Total doses.	New cases.	Total treated.	Extract.	Suspension.	Total doses.	New cases.	Total treated.	Extract.	Suspension.	Total doses.	New cases.	Total treated.	Extract.	Suspension.	Total doses.
74	Columbia,	1	1	1	0	1	0	1	1	0	4	1	2	2	0	6	0	2	2	0	5	0	2	2	0	4	0	2	2	0	3
76	Phoenixville,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
79	Tyrone,	0	2	0	2	4	0	2	0	2	4	0	2	0	2	4	0	2	0	2	4	0	2	0	2	3	0	2	0	2	4
80	Philipsburg,	1	12	2	10	36	0	11	3	8	29	3	14	3	11	46	0	11	3	8	40	0	12	4	8	34	2	12	6	6	41
81	McKeesport,	1	1	0	1	4	1	1	0	1	5	0	1	0	1	3	0	1	0	1	5	0	0	0	0	0	0	0	0	0	0
86	Hanover,	0	0	0	0	0	1	1	0	1	4	0	0	0	0	0	1	2	0	2	6	0	2	0	2	2	0	0	0	0	0
87	Bangor,	0	0	0	0	0	0	0	0	0	0	1	3	3	0	9	0	2	2	0	5	0	2	2	0	2	0	0	0	0	0
88	Monessen,	0	0	0	0	0	1	1	1	0	2	1	2	2	0	6	0	2	2	0	7	0	2	2	0	3	0	0	0	0	0
90	Titusville,	0	5	0	5	18	0	5	0	5	18	0	5	0	5	18	1	6	0	6	25	0	6	0	6	17	0	6	0	6	15
94	Pittston,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5	5	0	17
96	West Fairview,	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	0	1	5	1	1	1	0	2	0	1	1	0	4
98	South Bethlehem,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
100	Homestead,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7	0	20	2	10	10	0	17
102	Brookville,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
103	Beaver Falls,	0	2	0	2	3	0	2	0	2	4	0	2	0	2	4	1	2	0	2	3	0	1	0	1	1	2	3	0	3	8
107	Frankford,	2	2	2	0	5	1	3	3	0	7	2	4	4	0	13	0	2	2	0	7	0	1	1	0	1	0	0	0	0	0
108	Waynesboro,	0	3	0	3	8	2	3	3	0	4	0	0	0	0	0	1	4	4	0	5	1	4	4	0	11	0	4	4	0	9
109	Wilkinsburg,	0	11	11	0	31	1	8	8	0	24	2	10	10	0	28	0	6	6	0	17	2	7	7	0	19	0	8	8	0	30
113	Nanticoke,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
115	Kane,	0	1	0	1	4	0	1	0	1	3	0	1	0	1	4	0	0	0	0	0	1	2	0	2	5	0	2	0	2	6

REPORT OF TREATMENT OF TUBERCULOSIS WITH DIXON'S FLUID IN DISPENSARIES IN 1915—Continued.

Dispensary No.	Dispensary.	July.					August.					September.					October.					November.					December.					The Year.	
		New cases.	Total treated.	Extract.	Suspension.	Total doses.	New cases.	Total treated.	Extract.	Suspension.	Total doses.	New cases.	Total treated.	Extract.	Suspension.	Total doses.	New cases.	Total treated.	Extract.	Suspension.	Total doses.	New cases.	Total treated.	Extract.	Suspension.	Total doses.	New cases.	Total treated.	Extract.	Suspension.	Total doses.	Total number treated.	Total number doses given.
1	Wilkes-Barre,	4	9	0	9	20	2	9	2	7	15	2	9	3	6	23	3	10	4	6	21	5	12	2	10	20	3	12	3	9	24	34	200
2	York,	0	2	2	0	4	0	2	2	0	6	0	2	2	0	9	0	2	2	0	6	0	2	1	0	6	0	2	0	0	7	5	63
4	Carlisle,	0	2	2	0	3	0	2	2	0	3	0	2	2	0	3	0	1	1	0	1	0	1	1	0	1	0	0	0	0	0	4	31
6	West Chester,	0	2	2	0	3	0	2	2	0	3	0	1	1	0	2	0	1	1	0	3	0	0	0	0	0	0	0	0	0	0	2	15
9	Johnstown,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	5	3	12	0	0	0	0	0	0	5	5	0	12	9	66
11	Chambersburg,	0	5	5	0	11	0	2	2	0	2	0	1	1	0	3	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	1	67
12	Chester,	0	2	0	2	6	1	3	0	3	9	1	3	0	3	10	3	4	0	4	10	1	6	0	6	19	1	7	0	7	18	9	88
13	Harrisburg,	0	22	22	0	60	1	21	21	0	69	1	22	22	0	62	2	25	25	0	71	2	23	23	0	72	3	25	25	0	69	36	668
14	Altoona,	1	6	6	0	15	0	6	6	0	10	0	6	6	0	10	0	3	3	0	5	1	4	4	0	5	0	4	4	0	6	12	120
15	Butler,	1	7	7	0	16	1	6	6	0	12	0	6	6	0	13	1	6	6	0	12	2	6	6	0	19	0	5	5	0	17	23	259
16	Berwick,	0	2	0	2	7	0	2	0	2	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	134
20	Pittsburgh,	0	7	7	0	17	0	6	6	0	17	1	5	5	0	16	1	7	7	0	22	0	6	6	0	17	0	3	2	1	9	21	246
22	Rochester,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	6	5	33
24	Kittanning,	1	7	7	0	17	0	8	8	0	20	0	7	7	0	16	0	6	6	0	14	0	5	5	0	14	0	6	6	0	16	16	281
26	Mifflintown,	1	5	5	0	16	2	6	6	0	19	0	6	6	0	17	0	6	6	0	18	0	5	5	0	15	0	4	4	0	14	7	167
28	Danville,	0	2	2	0	7	1	2	2	0	4	1	4	4	0	14	1	4	4	0	15	0	4	4	0	13	0	4	4	0	14	5	77
33	Williamsport,	0	11	11	0	39	0	9	9	0	25	0	10	10	0	35	0	3	3	0	9	0	3	3	0	12	0	10	10	0	27	13	355
35	New Castle,	0	3	3	0	12	1	3	3	0	13	0	3	3	0	12	0	6	6	0	22	0	6	6	0	24	1	6	6	0	26	17	223
37	Reading,	1	5	4	1	11	1	5	6	0	12	0	2	2	0	6	1	3	3	0	7	0	3	3	0	9	0	3	3	0	7	10	142
39	Lancaster,	0	5	5	0	8	0	6	6	0	10	0	5	5	0	9	0	5	5	0	7	0	5	3	0	8	0	5	4	0	8	10	152
47	Huntingdon,	0	9	7	2	32	1	11	9	2	31	0	12	7	5	25	1	8	5	3	24	0	8	5	0	20	0	7	5	3	19	14	289
48	Indiana,	1	5	4	1	14	0	5	4	1	17	0	6	5	1	14	0	5	5	0	11	0	4	4	0	11	0	5	5	0	20	7	183
50	Selinsgrove,	0	1	1	0	4	1	2	2	0	5	0	2	2	0	8	0	2	2	0	5	0	4	1	0	8	0	4	2	0	12	4	46
51	Allentown,	0	3	3	0	7	0	3	3	0	7	0	2	2	0	4	0	2	2	0	6	0	1	1	0	2	0	0	0	0	0	4	52
52	Easton,	0	1	1	0	3	0	1	1	0	2	0	1	1	0	3	0	1	1	0	4	0	1	1	0	5	0	1	1	0	3	2	40
53	Shamokin,	0	6	1	5	21	0	6	4	0	19	0	6	1	0	15	0	1	1	0	15	0	6	1	0	12	0	3	1	2	6	14	243
54	Warren,	0	3	0	3	11	1	4	4	0	10	0	4	1	0	18	0	1	1	0	4	0	3	0	0	3	0	3	3	0	13	4	107
55	Monongahela,	1	1	1	0	2	0	1	1	0	2	0	1	0	1	4	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	1	10
64	Punxsutawney,	0	4	4	0	7	0	1	1	0	2	0	1	0	1	4	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	1	10
66	Pottsville,	2	8	8	0	26	0	4	4	0	14	0	5	5	0	10	0	6	6	0	15	0	5	4	0	19	0	5	4	1	13	4	123
69	Hastings,	0	3	3	0	11	1	4	4	0	10	1	5	5	0	19	2	7	7	0	21	1	8	8	0	23	1	8	8	0	20	9	138

REPORT OF TREATMENT OF TUBERCULOSIS WITH DIXON'S FLUID IN DISPENSARIES IN 1915—Continued.

Dispensary No.	Dispensary.	July.					August.					September.					October.					November.					December.					The Year.	
		New cases.	Total treated.	Extract.	Suspension.	Total doses.	New cases.	Total treated.	Extract.	Suspension.	Total doses.	New cases.	Total treated.	Extract.	Suspension.	Total doses.	New cases.	Total treated.	Extract.	Suspension.	Total doses.	New cases.	Total treated.	Extract.	Suspension.	Total doses.	New cases.	Total treated.	Extract.	Suspension.	Total doses.	Total number treated.	Total number doses given.
71	Mount Carmel,	0	21	21	0	38	4	23	23	0	38	0	22	22	0	37	1	21	21	0	25	0	15	15	0	26	0	17	17	0	35	41	531
74	Columbia,	0	1	1	0	1	0	1	1	0	1	0	1	1	0	1	0	1	1	0	1	0	2	2	0	3	0	0	0	0	0	2	30
76	Phoenixville,	0	7	7	0	17	0	6	6	0	19	0	6	6	0	10	1	4	4	0	8	0	1	1	0	3	0	0	0	0	0	8	57
79	Tyrone,	0	2	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	4	3	29
80	Philipsburg,	0	11	6	5	31	5	15	5	10	41	3	17	5	12	16	1	19	5	14	57	2	19	4	15	58	0	12	3	9	43	28	472
81	McKeesport,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	17
86	Hanover,	0	0	0	0	0	0	2	0	2	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	18
87	Bangor,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	16
88	Monessen,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	18
90	Titusville,	0	5	0	5	19	0	5	0	5	17	0	5	0	5	15	0	5	0	5	16	0	2	0	2	8	0	2	0	2	8	6	194
94	Pittston,	0	3	3	0	12	0	3	3	0	13	0	3	3	0	9	0	3	3	0	11	0	3	3	0	13	0	3	3	0	11	5	86
96	West Fairview,	0	1	1	0	2	0	1	1	0	1	0	1	1	0	3	0	2	2	0	4	0	2	2	0	4	0	1	1	0	2	2	28
98	South Bethlehem,	1	1	0	1	3	0	1	0	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	8
100	Homestead,	1	9	9	0	29	1	10	10	0	24	0	8	8	0	23	1	9	9	0	24	1	9	9	0	29	0	9	9	0	28	13	194
102	Brookville,	1	1	1	0	3	0	1	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	6
103	Beaver Falls,	0	2	0	2	5	0	2	0	2	4	0	0	0	0	0	0	2	0	2	4	0	0	0	0	0	0	0	0	0	0	5	36
107	Frankford,	0	0	0	0	0	1	1	1	0	1	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	36
108	Waynesboro,	1	4	4	0	11	0	0	0	0	0	0	3	3	0	8	0	3	3	0	8	1	4	4	0	6	0	0	0	0	0	9	70
109	Wilkinsburg,	1	6	6	0	16	0	4	4	0	11	0	3	3	0	13	1	4	4	0	12	1	5	5	0	16	0	5	5	0	20	19	237
113	Nanticoke,	0	0	0	0	0	0	0	0	0	0	1	1	1	0	4	0	1	1	0	4	0	1	1	0	4	0	1	1	0	3	1	15
115	Kane,	1	3	0	3	11	0	3	3	0	9	0	3	3	0	9	0	3	3	0	5	0	1	1	0	4	0	1	1	0	5	3	65
	Total,																															480	6,896

EFFECTS OF INJECTIONS.

LOCAL.

	Present.	Absent.	Not Stated.	Total.
Redness,	339	6,519	38	6,896
Swelling,	270	6,591	35	6,896
Tenderness,	664	6,194	38	6,896
Pain,	223	6,635	38	6,896

SPECIAL:

Average weight of patients under consideration before commencement of treatment by Dixon's Fluid was 108.5 lbs.

Average weight of patients after total injections, covering a period of twelve months, was 112.4 lbs.

GENERAL.

	Better.	Worse.	Un-changed.	Present.	Absent.	Total.
Sleep,	908	162	5,826	----------	----------	6,896
Appetite,	827	290	5,779	----------	----------	6,896
Digestion,	537	180	6,179	----------	----------	6,896
Fever,	73	26	113	1,018	5,666	6,896
Night sweats,	49	23	29	168	6,629	6,896
Cough,	557	278	827	1,076	4,158	6,896
Expectoration,	363	290	821	887	4,535	6,896
Hemoptysis,	23	11	17	58	6,787	6,896
Glands enlarged,	99	116	563	1,168	4,950	6,896

RESULTS OF BLOOD PRESSURE STUDY IN 3,754 CASES OF PULMONARY TUBERCULOSIS AND ITS COMPLICATIONS.

Admission Classification.	Result.	Sex.			Color.		Blood Pressure.						Arteries.		Location in State.			
							Systolic.			*Diastolic.								
		Total.	Male.	Female.	White.	Black and other.	Normal.	Above normal.	Below normal.	Normal.	Above normal.	Below normal.	Normal.	Sclerotic.	East.	West.	North.	South.
Total,		3,754	1,866	1,888	3,608	146	247	1,396	2,111	229	1,841	1,054	3,386	368	768	1,342	1,091	538
Incipient.	Cured,	5	2	3	5	0	0	2	3	0	3	2	4	1	4	1	0	0
	Apparently cured,	22	10	12	21	1	1	6	15	2	13	3	19	3	7	3	8	4
	Arrested,	13	4	9	13	0	1	3	9	1	9	2	11	2	1	2	9	1
	Apparently arrested,	169	56	113	164	5	10	66	93	5	107	48	161	8	20	48	77	24
	Improved,	590	238	352	571	19	38	239	313	41	318	167	547	43	134	194	204	58
	Unimproved,	207	86	121	199	8	14	52	141	22	161	107	200	7	57	76	62	12
	Dead,	29	10	19	26	3	3	15	11	2	21	4	26	3	6	12	9	2
Moderately advanced.	Cured,	2	1	1	2	0	1	0	1	0	2	0	2	0	2	0	0	0
	Apparently cured,	7	4	3	6	1	0	2	5	0	3	3	6	1	1	2	3	1
	Arrested,	12	3	9	11	1	1	3	8	2	9	1	8	4	5	0	5	2
	Apparently arrested,	107	43	64	103	4	6	54	47	5	69	19	99	8	0	51	41	15
	Improved,	598	325	273	576	22	42	283	320	37	357	112	539	59	163	135	177	123
	Unimproved,	649	322	327	631	18	56	301	245	29	277	111	590	59	183	191	151	124
	Dead,	101	59	42	91	10	4	47	50	4	56	27	86	15	20	26	31	24
Far advanced.	Cured,	2	2	0	2	0	0	0	2	0	0	2	1	1	0	0	2	0
	Apparently cured,	3	0	3	3	0	0	2	1	0	2	1	2	1	0	0	2	1
	Arrested,	5	2	3	5	0	0	3	2	0	1	3	4	1	3	2	0	0
	Apparently arrested,	44	19	25	43	1	5	16	23	5	24	4	42	2	8	22	8	6
	Improved,	344	207	137	330	14	17	104	223	22	133	104	306	38	49	160	105	30
	Unimproved,	533	351	182	514	19	31	136	366	31	175	208	471	62	105	238	115	75
	Dead,	312	122	190	292	20	17	62	233	31	101	126	262	50	0	179	82	51

*Total number of readings not the same as systolic because in some cases the diastolic pressure readings were not taken.

RESULTS OF BLOOD PRESSURE STUDY IN 3,754 CASES OF PULMONARY TUBERCULOSIS AND ITS COMPLICATIONS—Continued.

Admission Classification.	Result.	Ages.					No complications.	Complications.										
		Under 25 years.	25 to 35 years.	36 to 45 years.	46 to 55 years.	Over 55 years.		Goitre.	Glands.	Bones.	Ischio-rectal.	Enteritis.	Arthritis.	Nervous.	Syphilis.	Malignant.	Heart.	Larynx.
Total,		1,335	1,215	727	315	162	2,870	128	251	21	7	17	6	24	27	3	119	203
Incipient,	Cured,	4	0	0	1	0	3	0	2	0	0	0	0	0	0	0	0	0
	Apparently cured,	12	7	2	1	0	16	1	4	0	0	0	0	0	0	0	0	0
	Arrested,	1	4	0	0	2	12	0	1	0	0	0	0	0	0	0	0	0
	Apparently arrested,	95	44	25	4	1	162	4	0	0	0	0	0	0	0	0	1	0
	Improved,	282	172	99	30	7	463	39	29	1	1	0	1	5	5	0	20	20
	Unimproved,	106	65	22	13	1	162	13	9	1	0	0	0	1	3	0	10	7
	Dead,	9	8	5	3	4	22	0	2	0	0	1	0	0	0	1	2	0
Moderately advanced,	Cured,	1	1	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0
	Apparently cured,	1	1	3	2	0	6	0	0	0	0	0	0	0	0	0	1	0
	Arrested,	5	3	1	1	2	10	0	0	0	0	0	0	0	0	0	1	1
	Apparently arrested,	36	41	18	10	2	85	9	5	1	0	0	0	0	1	0	1	3
	Improved,	188	211	133	42	24	466	30	29	1	1	2	0	4	3	0	24	25
	Unimproved,	219	222	123	62	23	524	9	27	7	4	2	2	9	5	0	18	30
	Dead,	27	33	19	9	13	70	1	6	0	0	2	1	0	1	1	5	11
Far advanced,	Cured,	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0
	Apparently cured,	0	1	1	0	1	3	0	0	0	0	0	0	0	0	0	0	0
	Arrested,	1	1	3	0	0	5	0	0	0	0	0	0	0	0	0	0	0
	Apparently arrested,	12	9	14	8	1	33	1	3	1	0	0	1	0	0	0	2	3
	Improved,	93	125	63	38	25	237	15	34	3	0	2	1	0	3	0	16	18
	Unimproved,	161	179	108	58	27	375	3	63	4	1	5	0	4	4	1	10	49
	Dead,	74	88	88	33	29	214	2	36	2	0	3	0	1	2	0	8	36

RESULTS OF BLOOD PRESSURE STUDY IN 3,754 CASES OF PULMONARY TUBERCULOSIS AND ITS COMPLICATIONS—Continued.

Admission Classification.	Result.	Complications.																
		Goitre and glands.	Goitre and enteritis.	Goitre and nervous.	Goitre and heart.	Goitre and larynx.	Glands and arthritis.	Glands and nervous.	Glands and syphilis.	Glands and heart.	Glands and larynx.	Bones and heart.	Ischio-rectal and heart.	Ischio-rectal and larynx.	Nervous and larynx.	Syphilis and larynx.	Heart and larynx.	Pneumo-thorix.
Total,		10	1	1	5	6	4	2	1	12	23	1	1	2	1	2	2	4
Incipient,	Cured,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Apparently cured,	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
	Arrested,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Apparently arrested,	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
	Improved,	0	0	0	3	1	2	0	0	0	0	0	0	0	0	0	0	0
	Unimproved,	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
	Dead,	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Moderately advanced,	Cured,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Apparently cured,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Arrested,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Apparently arrested,	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
	Improved,	3	0	0	2	2	0	1	0	1	2	0	0	0	1	1	0	0
	Unimproved,	3	1	1	0	2	0	1	0	2	2	0	0	0	0	0	0	0
	Dead,	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	0
Far advanced,	Cured,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Apparently cured,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Arrested,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Apparently arrested,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Improved,	0	0	0	0	0	1	0	1	3	8	1	0	0	0	0	1	0
	Unimproved,	1	0	0	0	0	1	0	0	3	2	0	1	2	0	0	0	4
	Dead,	0	0	0	0	0	0	0	0	1	6	0	0	0	0	1	0	0

REPORT OF LARYNGOLOGISTS—(August to December, inclusive).

Initial Examination.	Total.	Cured.	Improved.	Stationary.	Worse.	Unstated.
Normal larynx,	868					
Non-tuberculous laryngitis,	330	22	52	68	6	182
Questionable laryngitis,	81	13	19	13	1	35
Incipient tuberculous laryngitis,	102	3	36	42	6	15
Moderately advanced laryngitis,	64	0	24	27	6	7
Far advanced laryngitis,	68	2	8	15	9	34

Nasal Obstructions.	Adenoids.	Septal Deformity.	Enlarged Turbinates.
a. Asosciated with pulmonary tuberculosis,	74	269	207
b. Associated with laryngeal tuberculosis,		20	8
Total,	74	289	215

Otitis.

a. Tuberculous,	4
b. Non-tuberculous, but associated with pulmonary tuberculosis,	26
Total,	30

Operations.

1. Septum,	9
2. Turbinates,	3
3. Adenoids,	41
4. Tonsils,	38
5. Larynx,	0
6. Uvula,	1
Total,	92
Number of routine treatments of return cases,	4,018

FORM 144.

COMMONWEALTH OF PENNSYLVANIA.
DEPARTMENT OF HEALTH.
DIVISION OF DISPENSARIES.

MONTHLY REPORT OF LARYNGOLOGIST.

INITIAL EXAMINATION	DISCHARGE CASES	CURED	IMPROVED	STATIONARY	WORSE
Normal larynx	Non-tubreculous laryngitis				
Non-tuberculous laryngitis	Questionable laryngitis				
Questionable laryngitis	Incipient tuberculous laryngitis				
Incipient tuberculous laryngitis	Moderately advanced laryngitis				
Moderately advanced laryngitis	Far advanced laryngitis				
Far advanced laryngitis					

NASAL OBSTRUCTIONS	ADENOIDS	SEPTAL DEFORMITY	ENLARGED TURBINATES
a. Associated with pulmonary tuberculosis			
b. Associated with laryngeal tuberculosis			

OTITIS

a. Tuberculous

b. Non-tuberculous, but associated with pulmonary tuberculosis

OPERATIONS	
1. Septum	
2. Turbinates	
3. Adenoids	
4. Tonsils	
5. Larynx	

ROUTINE TREATMENTS OF RETURN CASES

Form 108.

COMMONWEALTH OF PENNSYLVANIA.
DEPARTMENT OF HEALTH.

TUBERCULIN RECORD.

Dispensary No. ----------

Month of ---------- 191

Patients Started on Treatment During Month.

Name.	Extr. or Susp.	Dilut.	Date of first Dose.	No. Doses.	Class.	T.	P.	R.	Wt.	Ex-San. Pat.	Gland En-larged.	Blood Pressure.		Remarks.
												Syst.	Diastol	

BACK OF CARD.

Record Below All Patients Who Were Under Treatment at Dispensary During Present Month.

B = Better. W = Worse. P = Present. A = Absent. U = Unchanged.

Names.	Extract or suspension.	Dilution.	Doses.	Sleep.	Appetite.	Digestion.	Fever.	Night sweats.	Cough.	Expectoration.	Hemoptysis.	Glands enlarged.	At Site of Injection.				At Last Visit During Month.			
													Redness.	Swelling.	Tenderness.	Pain.	T.	P.	R.	Wt.

OCCUPATIONS AND NATIVITY OF ALL DISPENSARY PATIENTS WHO WERE DISCHARGED REGARDLESS OF DATE OF ADMISSION.

Summary.	Total.	Native.	Foreign.
Males—			
Classified by occupation,	4,826	2,933	1,893
Under occupational age, no occupation,	1,322	1,242	80
All males,	6,148	4,175	1,973
Females—			
Classified by occupation,	3,640	2,634	1,006
Under occupational age, no occupation,	1,877	1,703	174
All females,	5,517	4,337	1,180
Total cases,	1,665	8,512	3,153

DETAILED LIST OF DISPENSARY PATIENTS ADMITTED AND DISCHARGED BY SEX, OCCUPATIONS AND NATIVITY.

Males.	Total.	Native.	Foreign.
Total male occupations or classified occupations,	4,826	2,933	1,893
Under occupational age,	1,141	1,087	54
No occupation,	181	155	26
PROFESSIONAL GROUP (TOTAL),	61	44	17
Architects, artists, teachers of arts,	2	1	1
Clergymen,	7	5	2
Engineers, surveyors,	16	14	2
Journalists,	1	1	0
Lawyers,	19	9	10
Musicians, teachers of music,	0	0	0
Physicians, surgeons,	1	1	0
Teachers (school),	7	5	2
Others of this class not specified,	8	8	0
CLERICAL AND OFFICIAL GROUP (TOTAL),	281	247	34
Bookkeepers, clerks, copyists,	248	221	27
Bankers, brokers, officials of companies,	1	1	0
Collectors, agents, auctioneers,	25	19	6
Others of this class not specified,	7	6	1
MERCANTILE AND TRADING GROUP (TOTAL),	176	107	69
Apothecaries, pharmacists,	5	4	1
Commercial travelers,	98	74	24
Merchants, dealers,	34	12	22
Hucksters, peddlers,	39	16	23
Others of this class not specified,	0	0	0
PUBLIC ENTERTAINMENT GROUP (TOTAL),	52	38	14
Hotel and boarding house keepers,	6	5	1
Saloon keepers, liquor dealers, bartenders,	34	23	11
Others of this class not specified,	12	10	2
PERSONAL SERVICE GROUP (TOTAL),	129	89	40
Barbers, hairdressers,	56	31	25
Janitors, sextons,	13	10	3
Policemen, watchmen, detectives,	26	17	9
Soldiers, sailors, marines,	19	18	1
Others of this class not specified,	15	13	2
LABORING AND SERVANT GROUP (TOTAL),	1,251	633	618
Laborers (not agricultural),	1,133	553	580
Servants,	118	80	38

DETAILED LIST OF DISPENSARY PATIENTS ADMITTED AND DISCHARGED BY SEX, OCCUPATIONS AND NATIVITY—Continued.

Males.	Total.	Native.	Foreign.
MANUFACTURING AND MECHANICAL INDUSTRY GROUP (TOTAL).	1,572	952	620
Bakers, confectioners,	40	21	19
Blacksmiths,	29	12	17
Boot and shoemakers,	79	38	41
Brewers, distillers, rectifiers,	4	2	2
Butchers,	28	16	12
Cabinetmakers, upholsterers,	36	18	18
Carpenters, joiners,	85	56	29
Cigarmakers, tobacco workers,	25	14	11
Clock and watch repairers, jewelers,	3	1	2
Compositors, printers, pressmen,	55	46	9
Coopers,	11	7	4
Engineers and firemen (not railway),	59	42	17
Glass blowers, glass workers,	34	16	18
Hat and capmakers,	16	6	10
Iron and steel workers,	272	175	97
Leather makers,	3	1	2
Leather workers,	16	6	10
Machinists,	191	133	58
Marble and stone cutters,	29	18	11
Masons,	16	8	8
Mill and factory operators (textile),	136	89	47
Millers (flour and grist),	3	3	0
Painters, glaziers,	65	48	17
Plasterers,	8	8	0
Plumbers, gas and steam fitters,	36	31	5
Tailors,	108	15	93
Tinners, tinware makers,	24	11	13
Others of this class not specified,	161	111	50
AGRICULTURAL AND TRANSPORTATION GROUP (TOTAL).	973	572	401
Boatmen, canalmen,	0	0	0
Draymen, hackmen, teamsters,	143	124	19
Farmers, planters, farm laborers,	90	85	5
Gardeners, florists, nurserymen,	12	6	6
Livery stable keepers, hostlers,	7	6	1
Lumbermen, raftsmen,	9	9	0
Miners, quarrymen,	473	136	337
Sailors, pilots, fishermen,	3	1	2
Stock raisers, herders, drovers,	2	2	0
Steam railroad employes,	153	135	18
Others of this class not specified,	81	68	13
All other male occupations,	331	251	80

Females.	Total.	Native.	Foreign.
Total female occupations or classified occupations,	3,640	2,634	1,006
Under occupational age,	1,207	1,146	61
No occupation,	670	557	113
Artificial flower and paper box makers,	9	7	2
Bookkeepers, clerks, copyists,	108	100	8
Cigar makers and tobacco workers,	62	32	30
Dressmakers, seamstresses,	117	77	40
Hotel and boarding house keepers,	86	60	26
Laundresses,	62	48	14
Milliners,	13	11	2
Mill and factory operatives,	302	246	56
Musicians, teachers of music,	2	2	0
Nurses, midwives,	45	37	8
Servants,	363	258	105
Stenographers and typewriters,	38	38	0
Teachers in schools,	26	26	0
Telegraph and telephone operators,	24	23	1
Housewives,	2,271	1,572	699
All others,	112	97	15

HEALTH EXHIBITS OF THE DEPARTMENT.

Early in 1915, by the direction of the Commissioner of Health, the manager of the Tuberculosis Exhibit began the making of a motion picture which was to illustrate the methods employed by the different divisions of the Pennsylvania Department of Health in the State's campaign against tuberculosis. This picture was primarily designed for exhibition at the Panama-Pacific Exposition at San Francisco, and the first print made was immediately forwarded to California, where it was shown daily to large audiences.

Two additional copies of the entire picture were made for the use of the Tuberculosis Exhibit. Almost three months were consumed in making this picture. The outdoor scenes were, of necessity, taken at the various places represented by them. The indoor scenes were taken largely at the sanatorium at Mont Alto, where a studio was built for the purpose. The actors in every instance were the doctors, nurses and employes of the Department of Health and the patients of the dispensaries and sanatoria. The scenes were so arranged as to convey a correct impression of the dispensaries, the laboratory the visiting nurses' work and the sanatoria.

The scene opens in Wilkes-Barre; a patient is seen entering the dispensary; he is conducted to the waiting room, where he finds a number of other patients in waiting. When his turn arrives he goes before the clerk, who takes the history of his case, after which comes his medical examination. This is shown in detail. Next, he is seen receiving the supplies, consisting of sputum boxes, paper napkins, etc., which are regularly furnished to all patients.

The scene now shifts to the State Laboratory, where may be seen the different steps in the examination of the patient's sputum, ending by the finding of the tubercle bacillus in the specimen examined.

Now comes a household scene. The same patient with his wife and two children are about to partake of their noonday meal. The mother sends the little daughter to the door in response to the knock of the State nurse, who proceeds to give advice and instruction as to the betterment of their home conditions. Among other things, she notices that the children have dirty hands. This gives her an opportunity to impress upon the whole family the importance of washing the hands before eating.

She explains to the mother just how the ventilation may be improved by the simple device of fitting a narrow board under the lower sash of the window. She finds the upper back porch to be well

adapted to outside sleeping and assists in preparing the porch for sleeping purposes.

At the nurse's next visit the children, dancing their delight, exhibit clean hands for inspection, while the mother personally calls attention to the new board ventilator.

In the next scene the mother and children are at the train to bid the father good-bye, as he leaves for the free State tuberculosis sanatorium at Mont Alto.

Among the early teachings of the dispensary is the danger of kissing and hand-shaking, so far as tuberculous persons are concerned, and special attention is called in the title of the leave-taking scene to the fact that there is no kissing or hand-shaking.

Next comes the arrival of the train at the station at Mont Alto. Several nurses from the sanatorium are waiting to greet the expected patients. About twenty are there this time, men and women; a few well past middle life, but for the most part much younger, and some quite small children. Among them is our patient of the story. They enter the waiting automobile and begin the last stage of their journey to the sanatorium.

Glimpses of the magnificent natural scenery are shown, as for five miles over the winding mountain road they constantly ascend. Now, in the distance, gleaming in the sunshine, may be seen the white-walled cottages that make up this "Hillside City of Hope."

Next comes the arrival at the hospital, which is one mile from the camp proper. Here the automobile stops and the new arrivals are all conducted into a pleasant reception room. Attendants are busily engaged serving milk, and the nurses exert themselves to extend a cordial welcome, while, one by one, the doctors examine the patients. The advanced cases are detained at the hospital, while the ambulant ones (those who are able to walk about and care for themselves) re-enter the automobile and are taken to the camp.

The sanatorium at Mont Alto is the largest tuberculosis sanatorium in the world. Here we see row after row of cottages, built after the Dixon model, 28 feet square, windows in the corners, and with corners approximating the cardinal points of the compass.

Our patient is assigned to a cottage, a nurse accompanies him to his new quarters, introduces him to his housemates, and his life at the sanatorium begins.

The picture next takes up the routine life at the sanatorium; the rising at 7:00 A. M.; the going to breakfast; the return to the cottage; the nurses' rounds; the doctor's visit; the 9:30 o'clock lunch of milk and eggs, followed by an hour and a half on a reclining chair in the open air rest pavilion. Next are shown dinner at 12:00 o'clock; the manner of its serving; the kitchen; washing dishes; caring for garbage; the rest in bed for one hour after dinner; the recreation for the convalescent; the 2:30 lunch of milk and the

afternoon "cure," as they call the rest in the pavilions. Then comes supper, at 5:00 P. M.; the rest after supper; the evening lunch, 7:30, milk; the day's routine ends as the evening shadows close gently over this miracle in the wilderness.

Additional reels to illustrate the other free State tuberculosis sanatoria at Cresson and at Hamburg were prepared.

These motion pictures were largely exhibited throughout the State. The Tuberculosis Exhibit was now representing all of the Divisions of the State Department of Health, and on June 1, 1915, it was taken out of the Division of Tuberculosis Dispensaries and transferred to the General Division. It is now known as the State Health Exhibit.

Early in June a second tent was purchased; size 50 feet by 70 feet, with two center poles and a 9-foot side wall. The State's picture, entitled "Pennsylvania's War on Tuberculosis," was exhibited in this tent at eleven county fairs.

51—16—1918

The following is a summary of the report of the State Department of Health Exhibits at the county fairs during the year 1915.

In this report, the State Health Exhibit, composed of models, charts, photographs, etc., will be referred to as Exhibit No. 1. The Motion Picture Exhibit will be referred to as Exhibit No. 2.

Place.	County.	Date.	Attendance.
Fawn Grove,	York, Rain interfered with the attendance at this fair. Both Exhibits were shown. Exhibit No. 1 was viewed by, Exhibit No. 2 was viewed by,	Aug. 11-12-13. 	 2,000 people. 1,000 people.
Lebanon,	Lebanon, Exhibit No. 1 was viewed by, Exhibit No. 2 was viewed by,	Aug. 17-18-19-20. 	 20,000 people. 3,000 people.
Butler,	Butler, Exhibit No. 1 was viewed by.	Aug. 24-25-26-27. 	 30,000 people.
Kutztown,	Berks, Exhibit No. 2 was viewed by,	Aug. 24-25-26-27. 	 8,000 people.
Arden,	Washington, Exhibit No. 1 was viewed by,	Aug. 31, Sept. 1-2-3. 	 40,000 people.
Williams Grove Picnic,	Cumberland, Exhibit No. 2 was viewed by,	Aug. 31, Sept. 1-2-3. 	 5,000 people.
Brookville,	Jefferson, Extra set of reels, Exhibit No. 2, viewed by,	Aug. 31, Sept. 1-2-3. 	 4,000 people.
Indiana,	Indiana, Exhibit No. 1 was viewed by, Exhibit No. 2 was viewed by,	Sept. 7-8-9-10. 	 50,000 people. 8,000 people.
Corry,	Erie, Exhibit No. 1 was viewed by, Exhibit No. 2 was viewed by,	Sept. 14-15-16-17. 	 25,000 people. 4,000 people.
Pulaski,	Lawrence, Exhibit No. 1 was viewed by,	Sept. 21-22-23-24. 	 30,000 people.
Allentown,	Lehigh, Exhibit No. 2 was viewed by,	Sept. 21-22-23-24. 	 15,000 people.
Philadelphia,	Philadelphia, (Pennsylvania State Medical Society). Extra set of reels, Exhibit No. 2, viewed by,	Sept. 23. 	 500 physicians.
Somerset,	Somerset, Rain interfered with attendance at this fair. Exhibit No. 1 was viewed by,	Sept. 28-29-30, Oct. 1. 	 2,000 people.
Lancaster,	Lancaster, Exhibit No. 2 was viewed by,	Sept. 28-29-30, Oct. 1. 	 15,000 people.
Bloomsburg,	Columbia, Exhibit No. 1 was viewed by,	Oct. 5-6-7-8. 	 50,000 people.
York,	York, Exhibit No. 2 was viewed by,	Oct. 5-6-7-8. 	 15,000 people.
Hughesville,	Lycoming, Exhibit No. 1 was viewed by, Exhibit No. 2 was viewed by,	Oct. 12-13-14-15. 	 20,000 people. 8,000 people.
Lewisburg,	Union, Exhibit No. 1 was viewed by,	Oct. 19-20-21-22. 	 25,000 people.

Total number of fairs visited by Exhibit No. 1, ... 11
Total number of fairs visited by Exhibit No. 2, ... 11
An extra set of reel, Exhibit No. 2, was shown at the meeting of the State Medical Society in Philadelphia.
Total attendance at Exhibit No. 1, ... 294,000
Total attendance at Exhibit No. 2, ... 86,500

The following circulars were distributed during the above period:

30,000 Form No. 2 Typhoid Fever.
24,000 Form No. 3 Diphtheria.
24,000 Form No. 4 Scarlet Fever.
24,000 Form No. 8 Mumps.
18,000 Form No. 10 Chicken Pox.
36,000 Form No. 11 Pulmonary Tuberculosis.
24,000 Form No. 17 Quarantine.
27,000 Form No. 45 House Disinfection.
24,000 Form No. 65 Skirmish Line of Tuberculosis.

The Exhibits were apparently appreciated wherever shown, and the attendants were treated with courtesy and respect. In every instance an earnest request for another exhibit next year was filed.

Immediately after the close of the fair season, the motion picture, "Pennsylvania's War on Tuberculosis," was put on exhibition in motion picture houses in different parts of the State. The scheme followed was to arrange for a free exhibition of the motion picture for several hours during the day time, at which time such arrangements were made with the public schools that the teachers and pupils might have the opportunity of attending. For this service a nominal sum was paid to the manager of the motion picture house. In addition to this, we permitted the motion picture houses to run our picture in the evening in connection with their regular programs, for which they received pay. In this manner we were able to place the picture before a large number of people who otherwise might not have enough interest in the subject to go to see it. That some good has been accomplished is evidenced by the following letter written by a casual visitor to one of the evening shows:

Monessen, Pa., Dec. 2, 1915.

The Pennsylvania Board of Health, Harrisburg, Pa.

Gentlemen: I am writing to you to ask you for some information about consumption, because I believe I have a touch of it.

The other night I saw a moving picture of the way the State of Pennsylvania is fighting it, and it dawned on me at once to write to you for information about the place you take patients to, and I would also like to have the price or fee for such patients.

If you would like to have a sample of the sputum I spit, I will send it on receipt of your letter. I remain,

Yours truly,
(Signed) ——— ————————,

Monessen, Pa.

P. S.—Please let me know at once and oblige.

Everywhere the picture was well received and created a great deal of favorable comment. It was exhibited at the following places:

Date.	Town.	Place.	Hour.	Attendance.
10-23	Lewisburg,	Opera House,	1- 3 P. M.,	900
10-26	Mifflinburg,	Opera House,	2- 5 and 7-10 P. M.,	750
10-27	Northumberland,	Opera House,	2- 5 P. M.,	650
1-28	Danville,	Luna Theatre,	2- 5 P. M.,	900
11- 4	Hollidaysburg,	Lyric Theatre,	2- 5 P. M.,	600
11- 4	Chambersburg,	Star Theatre,	2- 5 P. M.,	500
11- 5	Chambersburg,	Star Theatre,	2- 5 P. M.,	500
11- 5	Bellefonte,	The Scenic,	2- 5 P. M.,	600
11- 8	Shippensburg,	Lyric Theatre,	2- 5 P. M.,	400
11- 9	Carlisle,	Opera House,	2- 5 P. M.,	500
11-15	Port Carbon,	Odd Fellows' Hall,	7-10 P. M.,	500
11-16	St. Clair,	Lyric Theatre,	3- 5 P. M.,*	1,400
11-17	Frackville,	White's Theatre,	3- 5 P. M.,*	1,300
11-18	Pottsville,	Victor Theatre,		2,500
11-19	Lansford,	Sharpe's Opera House,	2- 5 P. M.,*	1,550
11-20	Mauch Chunk,	Opera House,	3- 5 P. M.,*	1,500
11-23	Ebensburg,	Happy Hour Theatre,	2- 7 P. M.,*	900
11-23	Mahanoy City,	Regent Theatre,	9: 15 to 12 M.,*	2,301
11-24	Cresson,	Happy Hour Theatre,	2: 30 P. M.,	400
11-24	Shenandoah,	Lyric Theatre,	9: 15 to 12 M.,*	2,600
11-30	Gettysburg,	Walters Theatre,	1: 30 to 5: 30 P. M.,	
12- 1	Monessen,	Star Theatre,	2-5 P. M.,*	1,150
12- 2	Charleroi,	Majestic Theatre,	Afternoon and evening,	950
12- 3	Jeannette,	Eagle Theatre,	No record of attendance,	
12- 6	Irwin,	Opera House,	3- 5 P. M.,*	950
12- 6	Tremont,	Opera House,	2- 5 P. M.,	600
12- 7	Pitcairn,	Nemo Theatre,	3- 5 P. M.,*	960
12- 7	Williamstown,	Opera House,	2- 5 P. M.,	850
12- 8	Scottdale,	Scottdale Theatre,	3- 5 P. M.,*	2,000
12- 8	Lykens,	Theatorium,	2- 5 P. M.,	
12- 9	Elizabethville,	Star Theatre,	2- 5 P. M.,*	
12-10	Derry,	Gem Theatre,	2: 30- 5 P. M.,*	886
12-11	Johnstown,	Cambria Theatre,	9: 30-11: 30 A. M.,	100
12-14	Windber,	Lyric Theatre,	2: 30- 5 P. M.,	450
12-15	Gallitzin,	Victoria Theatre,	2: 30- 5 P. M.,*	1,050
12-16	South Fork,	Palace Theatre,	2: 30- 5 P. M.,	500
12-17	Altoona,	Mishler Theatre,	9-12 M.,	
12-18	Altoona,	Mishler Theatre,	9-12 M.,	
12-20	Huntingdon,	Gamble Theatre,	3- 5 P. M.,	

*Our motion picture was shown with the regular show in the evening, to which admission was charged, as well as being shown free at the other stated hours.

At the request of the management of the Corn and Potato Exhibit at Pottsville, and by the direction of the Commissioner of Health, the State Health Exhibit was taken to Pottsville and exhibited in the armory during November 17th, 18th, 19th and 20th. During this period it was viewed by more than five thousand persons At the same time, the State's motion picture, "Pennsylvania's War on Tuberculosis," was exhibited in one of the motion picture houses in Pottsville. After this, the Exhibit was returned to Harrisburg and placed in storage.

Under date of October 19, 1915, the following letter was sent by the Commissioner of Health to the different county and city superintendents of schools of Pennsylvania:

October 19, 1915.

Dear Sir: The State Department of Health will, upon application, send a representative to Teachers' Institutes to lecture on school hygiene. These talks will not only be of personal interest to the teachers, but have been planned with the idea of aiding and directing them in work which they may be doing along these lines.

The lectures will be illustrated with lantern slides if requested.

Application should be made at an early date. There is no charge for these lectures. I am,

Sincerely yours,
SAMUEL G. DIXON.

A large number of responses were received, although, on account of the lateness of the season, the programs of most of the county institutes had already been made up. In response to requests received, illustrated talks on the subject of "School Hygiene" were given at the following places:

Date.	Town.	Place.	Hour.	Attendance.
11-16	Gettysburg,	Opera House,	Morning,	500
11-19	Hazleton,	High School,	7: 30 P. M.,	300
11-20	Hazleton,	High School,	Morning,	250
11-23	Ebensburg,	Court House,	Afternoon,	700
11-21	Wayne,	High School,	12 M.,	60
11-29	Monessen,	High School,	Afternoon,	350
11-30	Monongahela,	High School,	4 P. M.,	70
12- 1	Kutztown,	State Normal School,	8 P. M.,	500
12- 3	Mount Carmel,	High School,	8 P. M.,	600
12- 6	Chester,	Larkin School,	2: 45 P. M.,	80
12- 9	McClellandtown,	High School,	8 P. M.,	350
12-10	Duquesne,	High School Building,	8 P. M.,	400
12-15	Towanda,	Court House,	Evening,	300
12-16	Tunkhannock,	Pastime Theatre,	3: 30-4: 30 P. M.,	500
12-18	Wanamie,	Central High School,	11 A. M.,	85
12-20	Danville,	High School Building,		200
12-22	Meadville,	High School Building,	Afternoon,	100
			Morning,	200
12-23	Meadville,	High School Building,	Afternoon,	700

The superintendents at these different places expressed great appreciation of the work that is being done by the State Department of Health in the matter of medical inspecion of schools and of the interest taken by the Commissioner of Health in urging a widespread knowledge of school hygiene.

THE UPFOLLOW OF FORMER PATIENTS OF THE TUBERCULOSIS DISPENSARIES AND SANATORIA OF THE PENNSYLVANIA DEPARTMENT OF HEALTH FOR 1915.

As the final test of the efficiency of any form of treatment for tuberculosis is the re-entrance of the patient into the battle of life, it is important, in addition to the reports of the number of patients discharged from sanatoria or dispensaries in good condition, to have some means of knowing how many of them remain well after their discharge. Such means are provided for estimating the value of the work of the State sanatoria and dispensaries by the Department's upfollow system. This consists of visits by the dispensary nurses to former sanatorium and dispensary patients at intervals of six months until two years have elapsed. Visits are made upon patients discharged with an unfavorable prognosis as well as upon those favorably discharged.

At each visit the nurse endeavors to see the patient himself, and, in addition to her inspection, she carefully inquires into his physical, social and economic condition, reporting her observations upon the forms provided (Forms 112 and 414). As these reports contain the classification upon admission and discharge, as well as at the time of the upfollow visit, they are tabulated according to the following schema:

Admission classification	Discharge classification	Upfollow classification
	Cured	Improved
Incipient	Apparently cured	Stationary
Moderately advanced	Arrested	Progressive
Far advanced	Apparently arrested	Dead of tuberculosis
	Improved	Dead from other causes
	Unimproved	No data
	Progressive	

The report is divided into four sections, one for the work with former dispensary patients who did not take sanatorium treatment, and one, each, for the former patients of the three State sanatoria. Each section is further divided into two parts to correspond with the reports of the first and last halves of the year, as the patients are visited at intervals of six months.

In the section devoted to the former dispensary patients, the same plan was followed which was adopted the year previous, of grouping the reports according to the reason for discharge. Thus, of the total of 9,238 reports, 15 were of patients who had been discharged as

"cured," 103 as "apparently cured," 1,587 as "arrested," 39 as "apparently arrested," 5 181 upon those discharged for "non-attendance," 1,163 for "removal,"482 for "non-compliance with regulations," 422 for "reference to private physicians" and 246 for "reference to institutions outside of the Department's jurisdiction." As noted the previous years, the most favorable conditions in every respect were found upon the upfollow of those who were discharged as "cured," "apparently cured," "arrested" and "apparently arrested." These terms are explained by the following:

SCHEMA OF CLASSIFICATION OF RESULTS OF TREATMENT AND THE CONDITION OF PATIENTS ON DISCHARGE FROM SANATORIUM, HOSPITAL OR DISPENSARY CARE.

Cured:
All constitutional symptoms and expectoration with bacilli absent for a period of *two years* under ordinary conditions of life.

Apparently Cured:
All constitutional symptoms and expectoration with bacilli absent for a period of *six months;* the physical signs to be those of a healed lesion.

Arrested:
All constitutional symptoms and expectoration with bacilli absent for a period of *three months;* the physical signs to be those of a healed lesion.

Apparently Arrested:
Absence of all constitutional symptoms; expectoration and bacilli may or may not be present; physical signs stationary or retrogressive; the foregoing conditions to have existed for at least *two months.*

Improved:
Constitutional symptoms lessened or entirely absent; physical signs improved or unchanged; cough and expectoration with bacilli usually present.

Unimproved:
All essential symptoms and signs unabated or increased.

Died:

Not only were the physical conditions improved to a greater extent in the "cured" and "arrested" groups, but a review of the tables of occupation and weekly income shows that there was a greater increase in the number employed. The members of these groups show more loss than gain in weekly income following their illness, but this is evidently due to their selection of lighter work. Several of the groups of patients who were dropped from the rolls for other reasons than "cure" or "arrest" were found to have increased weekly incomes, but were disregarding the advice which they had received and showed much less physical improvement.

The nurses were instructed to study with especial care the problem of "non-attendance" and to ascertain whether it is the fault of the patients or of the Department's representatives. They directed more than half of the entire number of visits to patients who were discharged for this cause. When these reports were edited it was found that the reason for "non-attendance," which occurred in the greatest number of instances, was that the patient felt that he was well enough to get along without further medical supervision. Some patients had

resumed work and were unable to report. Many patients exhibited a certain amount of sensitive pride in regard to their having had tuberculosis and a desire to forget it. Others were simply careless in maintaining their relations with the dispensary.

Persistent efforts were made to trace patients who had moved away, and those who were located were referred to the dispensaries serving the communities into which they had settled, or if they were traced to other states, the health authorities of such states were notified.

The tabulation of the upfollow of former sanatorium patients was carried out as in previous years. As Mont Alto is the oldest and largest of the three institutions, the work with its ex-patients was much greater than with those of Cresson and Hamburg. The report contains the first upfollow for graduates of Hamburg, which was opened October 18, 1914.

Combining the figures, which are given in detail in the tables which follow, there was a total of 3,077 visits this year upon former patients of the three sanatoria, of which 769 were made upon those classified on admission as "incipient," 1,472 as "moderately advanced" and 836 as "far advanced." The "incipient" were classified upon discharge as 1 "cured," 194 "apparently cured," 359 "arrested," 35 "apparently arrested," 164 "improved" and 16 "unimproved." The "moderately advanced" were classified upon discharge as 90 "apparently cured," 630 "arrested," 31 "apparently arrested," 586 "improved" and 135 "unimproved," while the "far advanced" were discharged as 9 "apparently cured." 168 "arrested," 12 "apparently arrested," 374 "improved" and 273 "unimproved."

The upfollow for these groups shows that of the 294 reported "cured" and "apparently cured" upon discharge from the sanatoria, 206 were found to have improved further, 63 remained the same as when discharged (stationary), 21 had become "progressive," 2 had died of tuberculosis and 2 showed no data; of the 1,235 reports of those discharged as "arrested" and "apparently arrested," 707 were "improved," 311 "stationary," 161 "progressive," 38 died of tuberculosis, 1 of some other cause and upon 17 there were no data; of the 1,124 discharged as "improved," 482 were found to have further "improved," 253 remained "stationary," 221 had become "progressive," 129 had died of tuberculosis and 9 of other causes, while there were no data in 30; finally of the 424 who were discharged as "unimproved," 63 were found to have "improved," 46 remained "stationary," 74 had become "progressive," 228 had died of tuberculosis, 1 of other causes and upon 12 no data.

Economically considered, the former sanatorium patients showed the following changes: There was a gain in the number of males occupied upon upfollow, who upon admission were classified as "incipient," of 37 per cent., while the average weekly income before ad-

mission was $13.63 and upon upfollow $11.67; "incipient" females gained 16 per cent. in the number occupied, and showed an average weekly income before admission of $5.89 and upon upfollow of $5.22; "moderately advanced" males gained 15 per cent. in the number occupied, and averaged $12.95 as their weekly income before admission and $12.20 at the time of upfollow; the "moderately advanced" females gained 10.5 per cent. in number occupied and from $5.20 to $5.55 in average weekly income; the "far advanced" males lost 20 per cent. in the number occupied and from $13.68 to $10.87 in average weekly income; while the "far advanced" females lost 10.9 per cent. in the number occupied and from $5.96 to $5.19 as average weekly income.

Conditions in the homes of the former sanatorium patients were generally better than those of the patients who had only had dispensary treatment. The former were also found to be more carefully applying their instruction in sanitation to their daily living than the latter.

Considering the upfollow report for this year as a whole, it seems to demonstrate that more physical benefit is derived from dispensary supervision than would be imagined, providing that the patients cooperate, but that the results of sanatorium treatment are decidedly superior and are more permanent.

UPFOLLOW JANUARY 1 TO JULY 1, 1915, OF 8 DISPENSARY CASES DISCHARGED AS "CURED."

Admitted as	Discharged as	Upfollowed as	Interval between Discharge and Last Upfollow.							
			Less than 6 Mos.	6-12 Mos.	12-18 Mos.	18-24 Mos.	24-30 Mos.	30-36 Mos.	36-42 Mos.	Over 42 Mos.	No data.
Incipient, 6= 75.0%	Cured, 6=100.0%	Improved, 3	0	1	2	0	0	0	0	0	0
		Stationary, 1	0	0	0	1	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 2	0	0	2	0	0	0	0	0	0
Moderately Advanced, 2= 25.0%	Cured, 2=100.0%	Improved, 2	0	2	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
Far Advanced, 0= 0.0%	Cured, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0

Average Age.

Incipient,	M.,	12.5 years.
	F.,	40.5 years.
Moderately Advanced,	M.,	17.0 years.
	F.,	24.0 years.
Far Advanced,	M.,	0.0 years.
	F.,	0.0 years.

Average Dispensary Attendance.

Incipient,	M.,	13.5 months.
	F.,	14.5 months.
Moderately Advanced,	M.,	6.0 months.
	F.,	6.0 months.
Far Advanced,	M.,	0.0 months.
	F.,	0.0 months.

Weight.

	Total.	No Data.	Gain.	Loss.	Stationary.
Incipient,	6	2	3	0	1
Moderately Advanced,	2	0	1	0	1
Far Advanced,	0	0	0	0	0

Sputum.

	Total.	No Data.	Not Examined.	Positive.	Negative.
Incipient,	6	0	2	0	4
Moderately Advanced,	2	0	2	0	0
Far Advanced,	0	0	0	0	0

UPFOLLOW JULY 1, 1915, TO JANUARY 1, 1916, OF 7 DISPENSARY CASES DISCHARGED AS "CURED."

Admitted as	Discharged as	Upfollowed as	Interval between Discharge and Last Upfollow.							
			Less than 6 Mos.	6-12 Mos.	12-18 Mos.	18-24 Mos.	24-30 Mos.	30-36 Mos.	36-42 Mos.	Over 42 Mos.	No data.
Incipient, 7=100%	Cured, 7=100.0%	Improved, 6	0	4	1	1	0	0	0	0	0
		Stationary, 1	0	1	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
Moderately Advanced, 0= 0.0%	Cured, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
Far Advanced, 0= 0.0%	Cured, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0

Average Age.

Incipient, M., 41.5 years. F., 16.2 years.
Moderately Advanced, M., 0.0 years. F., 0.0 years.
Far Advanced, M., 0.0 years. F., 0.0 years.

Average Dispensary Attendance.

Incipient, M., 42.5 months. F., 30.5 months.
Moderately Advanced, M., 0.0 months. F., 0.0 months.
Far Advanced, M., 0.0 months. F., 0.0 months.

Weight.

All gained.

Sputum.

Not Examined. 2

Negative. 5

UPFOLLOW JANUARY 1 TO JULY 1, 1915, OF 39 DISPENSARY CASES DISCHARGED AS "APPARENTLY CURED."

Admitted as	Discharged as	Upfollowed as	Interval between Discharge and Last Upfollow.								
			Less than 6 Mos.	6-12 Mos.	12-18 Mos.	18-24 Mos.	24-30 Mos.	30-36 Mos.	36-42 Mos.	Over 42 Mos.	No data.
Incipient, 27=69.2%	Apparently Cured, 27=100.0%	Improved, 22	0	9	8	4	1	0	0	0	0
		Stationary, 4	0	1	2	1	0	0	0	0	0
		Progressive, 1	0	0	1	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
Moderately Advanced, 9=23.1%	Apparently Cured, 9=100.0%	Improved, 9	0	4	3	2	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
Far Advanced, 3=7.7%	Apparently Cured, 3=100.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 3	0	2	0	1	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0

Average Age.

Incipient,	M.,	21.0 years.
	F.,	21.5 years.
Moderately Advanced,	M.,	11.5 years.
	F.,	27.0 years.
Far Advanced,	M.,	36.0 years.
	F.,	46.0 years.

Average Dispensary Attendance.

Incipient,	M.,	13.3 months.
	F.,	11.0 months.
Moderately Advanced,	M.,	'8.0 months.
	F.,	8.3 months.
Far Advanced,	M.,	19.0 months.
	F.,	18.5 months.

Weight.

	Total.	No Data.	Gain.	Loss.	Stationary.
Incipient,	27	0	20	2	5
Moderately Advanced,	9	0	4	1	4
Far Advanced,	3	0	2	0	1

Sputum.

	Total.	No Data.	Not Examined.	Positive.	Negative.
Incipient,	27	0	21	0	6
Moderately Advanced,	9	0	8	0	1
Far Advanced,	3	0	2	0	1

UPFOLLOW JULY 1, 1915, TO JANUARY 1, 1916, OF 64 DISPENSARY CASES DISCHARGED AS "APPARENTLY CURED."

Admitted as	Discharged as	Upfollowed as	Interval between Discharge and Last Upfollow.							
			Less than 6 Mos.	6-12 Mos.	12-18 Mos.	18-24 Mos.	24-30 Mos.	30-36 Mos.	36-42 Mos.	Over 42 Mos.	No data.
Incipient, 41=64.0%	Apparently Cured, 41=100.0%	Improved, 31	0	11	6	9	1	3	1	0	0
		Stationary, 6	0	3	0	2	0	1	0	0	0
		Progressive, 2	0	1	1	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 2	0	1	0	0	1	0	0	0	0
Moderately Advanced, 22=34.4%	Apparently Cured, 22=100.0%	Improved, 16	0	7	4	3	2	0	0	0	0
		Stationary, 6	0	6	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
Far Advanced, 1=1.5%	Apparently Cured, 1=100.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 1	0	0	0	0	0	1	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0

Average Age.

Incipient,	M.,	25.1 years.
	F.,	24.1 years.
Moderately Advanced,	M.,	24.1 years.
	F.,	19.0 years.
Far Advanced,	M.,	32.0 years.
	F.,	0.0 years.

Average Dispensary Attendance.

Incipient,	M.,	36.7 months.
	F.,	33.5 months.
Moderately Advanced,	M.,	17.5 months.
	F.,	20.4 months.
Far Advanced,	M.,	31.0 months.
	F.,	0.0 months.

Weight.

	Total.	No Data.	Gain.	Loss.	Stationary.
Incipient,	41	2	30	3	6
Moderately Advanced,	22	0	13	1	8
Far Advanced,	1	0	0	1	0

Sputum.

	Total.	No Data.	Not Examined.	Positive.	Negative.
Incipient,	41	2	29	1	9
Moderately Advanced,	22	0	19	1	2
Far Advanced,	1	0	1	0	1

UPFOLLOW JANUARY 1 TO JULY 1, 1915, OF 661 DISPENSARY CASES DISCHARGED AS "ARRESTED" AND "APPARENTLY ARRESTED."

Admitted as	Discharged as	Upfollowed as	Interval between Discharge and Last Upfollow.							
			Less than 6 Mos.	6-12 Mos.	12-18 Mos.	18-24 Mos.	24-30 Mos.	30-36 Mos.	36-42 Mos.	Over 42 Mos.	No data.
Incipient, 427= 64.6%	Arrested, 421= 98.6%	Improved, 307	0	91	98	79	31	6	2	0	0
		Stationary, 62	0	21	21	10	6	4	0	0	0
		Progressive, 14	0	2	6	3	1	2	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 1	1	0	0	0	0	0	0	0	0
		No data, 37	0	8	9	8	6	3	3	0	0
	Apparently Arrested, 6= 1.4%	Improved, 5	0	4	1	0	0	0	0	0	0
		Stationary, 1	0	0	1	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
Moderately Advanced, 212= 32.1%	Arrested, 209= 98.6%	Improved, 148	0	53	47	35	9	2	2	0	0
		Stationary, 32	0	11	14	5	1	0	1	0	0
		Progressive, 7	0	2	4	0	0	0	0	1	0
		Died, tuberculosis, 2	1	0	0	0	0	0	0	0	1
		Died, other, 1	1	0	0	0	0	0	0	0	0
		No data, 19	0	4	9	4	2	0	0	0	0
	Apparently Arrested, 3= 1.4%	Improved, 3	0	3	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
Far Advanced, 22= 3.3%	Arrested, 21= 95.4%	Improved, 16	0	8	4	0	3	0	1	0	0
		Stationary, 2	0	2	0	0	0	0	0	0	0
		Progressive, 3	0	0	1	0	2	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0

Apparently Arrested,-- 1= 4.5%	Improved,	0	0	0	0	0	0	0	0	0	0	0
	Stationary,	0	0	0	0	0	0	0	0	0	0	0
	Progressive,	0	0	0	0	0	0	0	0	0	0	0
	Died, tuberculosis,	0	0	0	0	0	0	0	0	0	0	0
	Died, other,	1	1	0	0	0	0	0	0	0	0	0
	No data,	0	0	0	0	0	0	0	0	0	0	0

Average Age.

Incipient,	M.,	19.4 years.
	F.,	21.8 years.
Moderately Advanced,	M.,	24.3 years.
	M.,	27.2 years.
Far Advanced,	M.,	38.3 years.
	F.,	40.1 years.

Average Dispensary Attendance.

Incipient,	M.,	23.9 months.
	F.,	26.1 months.
Moderately Advanced,	M.,	19.7 months.
	F.,	25.9 months.
Far Advaneed,	M.,	25.7 months.
	F.,	30.3 months.

	Weight. Total.	No Data.	Gain.	Loss.	Stationary.
Incipient,	426	37	317	6	113
Moderately advanced,	209	11	129	11	58
Far Advanced,	21	0	16	1	4

	Sputum. Total.	No Data.	Not Examined.	Positive.	Negative.
Incipient.	426	23	284	6	113
Moderately Advanced,	209	11	129	11	58
Far Advanced,	21	0	16	1	4

UPFOLLOW JULY 1, 1915, TO JANUARY 1, 1916, OF 965 DISPENSARY CASES DISCHARGED AS "ARRESTED" AND "APPARENTLY ARRESTED."

Admitted as	Discharged as	Upfollowed as	Interval between Discharge and Last Upfollow.							
			Less than 6 Mos.	6-12 Mos.	12-18 Mos.	18-24 Mos.	24-30 Mos.	30-36 Mos.	36-42 Mos.	Over 42 Mos.	No data.
Incipient, 625= 64.8%	Arrested, 613= 98.1%	Improved, 478	0	166	108	96	90	9	8	1	0
		Stationary, 92	0	45	27	12	9	3	1	0	0
		Progressive, 15	0	4	3	4	3	1	0	0	0
		Died, tuberculosis, 1	0	0	0	0	0	1	0	0	0
		Died, other, 2	1	1	0	0	0	0	0	0	0
		No data, 20	0	5	4	3	6	0	2	0	0
	Apparently Arrested, 12= 1.9%	Improved, 12	0	7	2	3	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
Moderately Advanced, 323= 33.5%	Arrested, 307= 95.0%	Improved, 230	0	68	60	54	46	1	1	0	0
		Stationary, 55	0	20	16	12	5	1	1	0	0
		Progressive, 11	0	4	3	3	0	0	1	0	0
		Died, tuberculosis, 1	0	0	0	0	0	1	0	0	0
		Died, other, 1	0	1	0	0	0	0	0	0	0
		No data, 9	0	2	4	2	1	0	0	0	0
	Apparently Arrested, 16= 5.0%	Improved, 11	0	9	2	0	0	0	0	0	0
		Stationary, 5	0	5	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
Far Advanced, 16= 1.6%	Arrested, 15= 93.7%	Improved, 8	0	3	3	0	1	1	0	0	0
		Stationary, 5	0	0	3	1	0	1	0	0	0
		Progressive, 2	0	1	1	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0

		Apparently arrested,-- 1= 6.3%	Improved,	1	0	1	0	0	0	0	0	0	0
			Stationary,	0	0	0	0	0	0	0	0	0	0
			Progressive,	0	0	0	0	0	0	0	0	0	0
			Died, tuberculosis,	0	0	0	0	0	0	0	0	0	0
			Died, other,	0	0	0	0	0	0	0	0	0	0
			No data,	0	0	0	0	0	0	0	0	0	0
Glands, 1= 0.5%		Arrested, 1=100.0%	Improved,	1	0	0	0	1	0	0	0	0	0

Average Age.

Incipient,	M.,	14.9 years.
	F.,	21.7 years.
Moderately Advanced,	M.,	34.4 years.
	F.,	29.8 years.
Far Advanced,	M.,	28.0 years.
	F.,	29.7 years.
Glands,	M.,	8.0 years.
	F.,	0.0 years.

Average Dispensary Attendance.

Incipient,	M.,	29.5 months.
	F.,	26.1 months.
Moderately Advanced,	M.,	21.8 months.
	F.,	27.2 months.
Far Advanced,	M.,	21.5 months.
	F.,	22.5 months.
Glands,	M.,	23.0 months.
	F.,	0.0 months.

	Weight. Total.	No Data.	Gain.	Loss.	Stationary.
Incipient,	622	34	464	50	74
Moderately Advanced,	321	16	227	29	49
Far Advanced,	16	1	7	4	4
Glands,	1	1	0	0	0

	Sputum. Total.	No Data.	Not Examined.	Positive.	Negative.
Incipient,	622	20	392	12	198
Moderately Advanced,	321	8	198	10	105
Far Advanced,	16	0	9	0	7
Glands,	1	0	1	0	0

UPFOLLOW JANUARY 1 TO JULY 1, 1915, OF 2,435 DISPENSARY CASES DISCHARGED FOR "NON-ATTENDANCE."

Admitted as	Discharged as	Upfollowed as	Interval between Discharge and Last Upfollow.								
			Less than 6 Mos.	6-12 Mos.	12-18 Mos.	18-24 Mos.	24-30 Mos.	30-36 Mos.	36-42 Mos.	Over 42 Mos.	No data.
Incipient, 1,271= 52.2%	Cured, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Apparently Cured, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Arrested, 81= 6.4%	Improved, 66	0	14	15	23	10	3	1	0	0
		Stationary, 10	0	3	6	1	0	0	0	0	0
		Progressive, 1	0	0	0	0	1	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 4	0	0	0	4	0	0	0	0	0
	Apparently Arrested, 1= 0.1%	Improved, 1	0	1	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Improved, 855= 67.2%	Improved, 528	0	220	162	77	49	10	9	1	0
		Stationary, 140	0	77	32	18	8	2	3	0	0
		Progressive, 40	0	23	10	5	1	0	1	0	0
		Died, tuberculosis, 10	2	5	0	1	1	1	0	0	0
		Died, other, 1	0	1	0	0	0	0	0	0	0
		No data, 136	0	41	39	30	17	5	3	1	0

Moderately advanced, 976= 40.1%	Unimproved, 334= 26.3%	Improved,	176	0	82	53	29	10	2	0	0	0
		Stationary,	60	0	34	15	4	4	3	0	0	0
		Progressive,	16	0	11	2	1	0	1	1	0	0
		Died, tuberculosis,	2	0	0	1	0	0	0	0	0	1
		Died, other,	3	2	0	0	0	0	0	0	0	1
		No data,	77	0	30	27	6	8	4	2	0	0
	Cured, 0= 0.0%	Improved,	0	0	0	0	0	0	0	0	0	0
		Stationary,	0	0	0	0	0	0	0	0	0	0
		Progressive,	0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis,	0	0	0	0	0	0	0	0	0	0
		Died, other,	0	0	0	0	0	0	0	0	0	0
		No data,	0	0	0	0	0	0	0	0	0	0
	Apparently Cured, 1= 0.1%	Improved,	0	0	0	0	0	0	0	0	0	0
		Stationary,	1	0	0	0	0	1	0	0	0	0
		Progressive,	0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis,	0	0	0	0	0	0	0	0	0	0
		Died, other,	0	0	0	0	0	0	0	0	0	0
		No data,	0	0	0	0	0	0	0	0	0	0
	Arrested, 39= 4.0%	Improved,	23	0	8	5	7	3	0	0	0	0
		Stationary,	8	0	3	2	2	1	0	0	0	0
		Progressive,	1	0	0	1	0	0	0	0	0	0
		Died, tuberculosis,	2	1	1	0	0	0	0	0	0	0
		Died, other,	1	0	0	1	0	0	0	0	0	0
		No data,	4	0	2	1	1	0	0	0	0	0
	Apparently Arrested, 0= 0.0%	Improved,	0	0	0	0	0	0	0	0	0	0
		Stationary,	0	0	0	0	0	0	0	0	0	0
		Progressive,	0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis,	0	0	0	0	0	0	0	0	0	0
		Died, other,	0	0	0	0	0	0	0	0	0	0
		No data,	0	0	0	0	0	0	0	0	0	0
	Improved, 564= 57.8%	Improved,	315	0	131	76	50	47	5	5	1	0
		Stationary,	121	0	47	39	17	14	3	1	0	0
		Progressive,	26	0	10	5	6	1	3	1	0	0
		Died, tuberculosis,	12	3	4	2	1	2	0	0	0	0
		Died, other,	1	0	0	1	0	0	0	0	0	0
		No data,	89	0	33	26	10	15	5	0	0	0
	Unimproved, 372= 38.1%	Improved,	142	0	60	45	22	10	3	2	0	0
		Stationary,	79	0	34	26	9	6	4	0	0	0
		Progressive,	34	0	13	8	5	4	2	2	0	0
		Died, tuberculosis,	25	10	9	2	1	1	0	0	0	2
		Died, other,	2	0	0	0	0	0	1	0	0	1
		No data,	90	0	40	23	17	6	3	1	0	0

UPFOLLOW JANUARY 1 TO JULY 1, 1915, OF 2,435 DISPENSARY CASES DISCHARGED FOR "NON-ATTENDANCE"—Continued.

Admitted as	Discharged as	Upfollowed as	Interval between Discharge and Last Upfollow.								
			Less than 6 Mos.	6-12 Mos.	12-18 Mos.	18-24 Mos.	24-30 Mos.	30-36 Mos.	36-42 Mos.	Over 42 Mos.	No data.
Far Advanced, 183= 7.5%	Cured, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Apparently Cured, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Arrested, 2= 1.1%	Improved, 2	0	1	0	0	0	1	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Apparently Arrested, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Improved, 86= 47.0%	Improved, 37	0	17	10	6	4	0	0	0	0
		Stationary, 17	0	9	2	5	1	0	0	0	0
		Progressive, 10	0	4	3	2	1	0	0	0	0
		Died, tuberculosis, 13	4	5	2	2	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 9	0	3	3	2	1	0	0	0	0

	Unimproved, ---------- 95= 51.9%	Improved, ---------- 16	0	8	5	2	1	0	0	0	0
		Stationary, ---------- 12	0	4	7	1	0	0	0	0	0
		Progressive, ---------- 12	0	6	5	0	1	0	0	0	0
		Died, tuberculosis, ------ 36	18	8	5	1	1	0	0	0	3
		Died, other, ---------- 0	0	0	0	0	0	0	0	0	0
		No data, ---------- 19	0	9	7	2	1	0	0	0	0
Glands, ---------- 3= 0.1%	Arrested, ---------- 1= 33.3%	No data, ---------- 1	0	0	0	0	1	0	0	0	0
	Unimproved, ---------- 2= 66.6%	Improved, ---------- 1	0	0	1	0	0	0	0	0	0
		No data, ---------- 1	0	0	1	0	0	0	0	0	0
Lupus, ---------- 2= 0.1%	Improved, ---------- 2=100.0%	Improved, ---------- 2	0	2	0	0	0	0	0	0	0

UPFOLLOW IN FIRST HALF OF 1915 OF CASES DISCHARGED FOR "NON-ATTENDANCE."

Average Age.

Incipient	M.,	22.3 years.
	F.,	22.7 years.
Moderately Advanced,	M.,	32.1 years.
	F.,	30.5 years.
Far Advanced,	M.,	39.7 years.
	F.,	33.9 years.
Glands,	M.,	8.0 years.
	F.,	10.5 years.
Lupus,	M.,	0.0 years.
	F.,	39.0 years.

Average Dispensary Attendance.

Incipient,	M.,	15.8 months.
	F.,	16.9 months.
Moderately Advanced,	M.,	12.3 months.
	F.,	14.1 months.
Far Advanced,	M.,	9.9 months.
	F.,	10.4 months.
Glands,	M.,	6.5 months.
	F.,	2.5 months.
Lupus,	M.,	0.0 months.
	F.,	10.0 months.

Weight.

	Total.	No Data.	Gain.	Loss.	Stationary.
Incipient,	1,255	235	735	111	174
Moderately Advanced,	933	194	448	125	166
Far Advanced,	134	31	55	24	24
Glands,	4	2	2	0	0
Lupus,	1	1	0	0	0

Sputum.

	Total.	No Data.	Not Examined.	Positive.	Negative.
Incipient,	1,255	142	800	23	290
Moderately Advanced,	933	115	539	40	239
Far Advanced,	134	18	80	8	28
Glands,	4	1	3	0	0
Lupus,	1	0	0	1	0

UPFOLLOW JULY 1, 1915, TO JANUARY 1, 1916, OF 2,746 DISPENSARY CASES DISCHARGED FOR "NON-ATTENDANCE."

Admitted as	Discharged as	Upfollowed as	Interval between Discharge and Last Upfollow.							
			Less than 6 Mos.	6-12 Mos.	12-18 Mos.	18-24 Mos.	24-30 Mos.	30-36 Mos.	36-42 Mos.	Over 42 Mos.	No data.
Incipient, 1,488=54.2%	Cured, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Apparently Cured, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Arrested, 72= 4.8%	Improved, 60	0	5	9	16	28	1	0	1	0
		Stationary, 8	0	3	2	0	3	0	0	0	0
		Progressive, 1	0	0	0	0	1	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 3	0	1	0	0	2	0	0	0	0
	Apparently Arrested, 1= 0.1%	Improved, 1	0	1	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Improved, 1,021= 68.6%	Improved, 711	0	205	196	172	65	31	35	7	0
		Stationary, 170	0	70	32	31	18	9	8	2	0
		Progressive, 39	0	13	12	6	5	1	2	0	0
		Died, tuberculosis, 5	1	2	0	0	2	0	0	0	0
		Died, other, 1	1	0	0	0	0	0	0	0	0
		No data, 95	0	48	17	15	7	3	5	0	0

	Unimproved, ---------- 394= 26.5%	Improved, ----------230	0	83	69	33	22	5	17	1	0
		Stationary, ----------82	0	30	28	12	7	1	4	0	0
		Progressive, ---------- 25	0	8	5	10	0	1	1	0	0
		Died, tuberculosis, ------ 4	1	3	0	0	0	0	0	0	0
		Died, other, ---------- 3	1	0	1	0	0	1	0	0	0
		No data, ---------- 50	0	26	11	7	5	1	0	0	0
	Cured, ---------- 0= 0.0%	Improved, ---------- 0	0	0	0	0	0	0	0	0	0
		Stationary, ---------- 0	0	0	0	0	0	0	0	0	0
		Progressive, ---------- 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, ----- 0	0	0	0	0	0	0	0	0	0
		Died, other, ---------- 0	0	0	0	0	0	0	0	0	0
		No data, ---------- 0	0	0	0	0	0	0	0	0	0
	Apparently Cured, --- 0= 0.0%	Improved, ---------- 0	0	0	0	0	0	0	0	0	0
		Stationary, ---------- 0	0	0	0	0	0	0	0	0	0
		Progressive, ---------- 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, ----- 0	0	0	0	0	0	0	0	0	0
		Died, other, ---------- 0	0	0	0	0	0	0	0	0	0
		No data, ---------- 0	0	0	0	0	0	0	0	0	0
	Arrested, ---------- 47= 4.3%	Improved, ---------- 32	0	11	2	6	12	0	1	0	0
		Stationary, ---------- 10	0	6	1	3	0	0	0	0	0
		Progressive, ---------- 1	0	0	0	1	0	0	0	0	0
		Died, tuberculosis, ----- 0	0	0	0	0	0	0	0	0	0
		Died, other, ---------- 0	0	0	0	0	0	0	0	0	0
		No data, ---------- 4	0	1	1	2	0	0	0	0	0
Moderately Advanced, 1,083= 39.4%	Apparently Arrested,-- 1= 0.1%	Improved, ---------- 1	0	0	0	1	0	0	0	0	0
		Stationary, ---------- 0	0	0	0	0	0	0	0	0	0
		Progressive, ---------- 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, ----- 0	0	0	0	0	0	0	0	0	0
		Died, other, ---------- 0	0	0	0	0	0	0	0	0	0
		No data, ---------- 0	0	0	0	0	0	0	0	0	0
	Improved, ---------- 655= 60.5%	Improved, ----------403	0	133	105	77	52	19	14	3	0
		Stationary, ----------133	0	61	21	27	11	8	4	1	0
		Progressive, ---------- 40	0	16	7	8	6	3	0	0	0
		Died, tuberculosis, ------ 12	2	2	5	1	2	0	0	0	0
		Died, other, ---------- 2	0	1	0	0	1	0	0	0	0
		No data, ---------- 65	0	36	10	13	4	1	1	0	0
	Unimproved, ---------- 380= 35.1%	Improved, ----------175	0	56	45	30	25	4	10	5	0
		Stationary, ---------- 99	0	40	17	18	14	3	7	0	0
		Progressive, ---------- 35	0	16	8	4	4	1	2	0	0
		Died, tuberculosis, ----- 10	3	4	0	0	2	0	0	1	0
		Died, other, ---------- 3	1	2	0	0	0	0	0	0	0
		No data, ---------- 58	0	31	13	10	2	1	1	0	0

UPFOLLOW JULY 1, 1915, TO JANUARY 1, 1916, OF 2,746 DISPENSARY CASES DISCHARGED FOR "NON-ATTENDANCE"—Continued.

Admitted as	Discharged as	Upfollowed as	Interval between Discharge and Last Upfollow.							
			Less than 6 Mos.	6-12 Mos.	12-18 Mos.	18-24 Mos.	24-30 Mos.	30-36 Mos.	36-42 Mos.	Over 42 Mos.	No data.
Far Advanced, 160= 5.8%	Cured, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Apparently Cured, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Arrested, 3= 1.9%	Improved, 2	0	0	1	1	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 1	0	1	0	0	0	0	0	0	0
	Apparently Arrested, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Improved, 61= 38.1%	Improved, 27	0	12	7	4	3	1	0	0	0
		Stationary, 14	0	6	5	2	0	0	1	0	0
		Progressive, 5	0	2	2	1	0	0	0	0	0
		Died, tuberculosis, 3	2	0	0	1	0	0	0	0	0
		Died, other, 1	1	0	0	0	0	0	0	0	0
		No data, 11	0	10	0	1	0	0	0	0	0

	Unimproved, 96= 60.0%	Improved,	18	0	8	5	3	1	0	1	0	0
		Stationary,	15	0	9	4	1	1	0	0	0	0
		Progressive,	7	0	4	1	1	1	0	0	0	0
		Died, tuberculosis,	38	26	7	3	2	0	0	0	0	0
		Died, other,	0	0	0	0	0	0	0	0	0	0
		No data,	18	0	10	2	3	3	0	0	0	0
Glands, 13= 0.5 %	Improved, 10= 76.9%	Improved,	8	0	7	1	0	0	0	0	0	0
		Stationary,	1	0	1	0	0	0	0	0	0	0
		No data,	1	0	0	1	0	0	0	0	0	0
	Unimproved, 3= 23.1%	Improved,	3	0	3	0	0	0	0	0	0	0
Lupus, 1= 0.04%	Improved, 1=100.0%	Stationary,	1	0	0	0	1	0	0	0	0	0
Bone, 1= 0.04%	Unimproved, 1=100.0%	Improved,	1	0	0	1	0	0	0	0	0	0

UPFOLLOW IN LAST HALF OF 1915 OF CASES DISCHARGED FOR "NON-ATTENDANCE."

Average Age.

Incipient,	M.,	21.4 years.
	F.,	23.4 years.
Moderately Advanced,	M.,	30.0 years.
	F.,	31.0 years.
Far Advanced,	M.,	40.0 years.
	F.,	34.7 years.
Glands,	M.,	5.3 years.
	F.,	8.0 years.
Lupus,	M.,	0.0 years.
	F.,	30.0 years.
Bone,	M.,	10.0 years.
	F.,	0.0 years.

Average Dispensary Attendance.

Incipient,	M.,	16.3 months.
	F.,	15.3 months.
Moderately Advanced,	M.,	11.5 months.
	F.,	14.1 months.
Far Advanced,	M.,	6.2 months.
	F.,	11.2 months.
Glands,	M.,	8.2 months.
	F.,	9.3 months.
Lupus,	M.,	0.0 months.
	F.,	7.0 months.
Bone,	M.,	9.0 months.
	F.,	0.0 months.

Weight.

	Total.	No Data.	Gain.	Loss.	Stationary.
Incipient,	1,475	195	932	127	221
Moderately Advanced,	1,056	173	549	135	199
Far Advanced,	118	35	40	21	22
Glands,	13	1	11	0	1
Lupus,	1	1	0	0	0
Bone,	1	1	0	0	0

Sputum.

	Total.	No Data.	Not Examined.	Positive.	Negative.
Incipient,	1,475	128	983	28	336
Moderately Advanced,	1,056	106	611	48	291
Far Advanced,	118	17	69	9	23
Glands,	13	0	13	0	0
Lupus,	1	0	1	0	0
Bone,	1	0	1	0	0

UPFOLLOW JANUARY 1 TO JULY 1, 1915, OF 598 DISPENSARY CASES DISCHARGED BECAUSE OF "REMOVAL."

Admitted as	Discharged as	Upfollowed as	Interval between Discharge and Last Upfollow.							
			Less than 6 Mos.	6-12 Mos.	12-18 Mos.	18-24 Mos.	24-30 Mos.	30-36 Mos.	36-42 Mos.	Over 42 Mos.	No data.
Incipient, 245= 41.0%	Cured, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Apparently Cured, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Arrested, 6= 2.5%	Improved, 3	0	0	2	0	1	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 3	0	0	2	1	0	0	0	0	0
	Apparently Arrested, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Improved, 178= 72.7%	Improved, 87	0	27	27	12	19	1	1	0	0
		Stationary, 16	0	3	4	6	2	1	0	0	0
		Progressive, 8	0	4	2	2	0	0	0	0	0
		Died, tuberculosis, 1	0	0	1	0	0	0	0	0	0
		Died, other, 2	1	0	0	0	0	1	0	0	0
		No data, 64	0	24	19	5	8	7	1	0	0

	Unimproved, ---------- 61= 24.8%	Improved, ---------- 31	0	12	13	3	2	1	0	0	0
		Stationary, ---------- 9	0	4	3	1	0	1	0	0	0
		Progressive, ---------- 1	0	1	0	0	0	0	0	0	0
		Died, tuberculosis, ----- 0	0	0	0	0	0	0	0	0	0
		Died, other, ---------- 0	0	0	0	0	0	0	0	0	0
		No data, ---------- 20	0	10	9	1	0	0	0	0	0
	Cured, ---------- 0= 0.0%	Improved, ---------- 0	0	0	0	0	0	0	0	0	0
		Stationary, ---------- 0	0	0	0	0	0	0	0	0	0
		Progressive, ---------- 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, ----- 0	0	0	0	0	0	0	0	0	0
		Died, other, ---------- 0	0	0	0	0	0	0	0	0	0
		No data, ---------- 0	0	0	0	0	0	0	0	0	0
	Apparently Cured, --- 1= 0.4%	Improved, ---------- 1	0	0	0	0	0	0	0	1	0
		Stationary, ---------- 0	0	0	0	0	0	0	0	0	0
		Progressive, ---------- 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, ----- 0	0	0	0	0	0	0	0	0	0
		Died, other, ---------- 0	0	0	0	0	0	0	0	0	0
		No data, ---------- 0	0	0	0	0	0	0	0	0	0
	Arrested, ---------- 2= 0.8%	Improved, ---------- 0	0	0	0	0	0	0	0	0	0
		Stationary, ---------- 0	0	0	0	0	0	0	0	0	0
		Progressive, ---------- 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, ----- 0	0	0	0	0	0	0	0	0	0
		Died, other, ---------- 0	0	0	0	0	0	0	0	0	0
		No data, ---------- 2	0	1	0	0	1	0	0	0	0
Moderately Advanced, 247= 41.8%	Apparently Arrested,-- 0= 0.0%	Improved, ---------- 0	0	0	0	0	0	0	0	0	0
		Stationary, ---------- 0	0	0	0	0	0	0	0	0	0
		Progressive, ---------- 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, ----- 0	0	0	0	0	0	0	0	0	0
		Died, other, ---------- 0	0	0	0	0	0	0	0	0	0
		No data, ---------- 0	0	0	0	0	0	0	0	0	0
	Improved, ---------- 144= 58.3%	Improved, ---------- 55	0	24	15	7	6	2	1	0	0
		Stationary, ---------- 19	0	9	3	3	4	0	0	0	0
		Progressive, ---------- 11	0	1	6	0	2	2	0	0	0
		Died, tuberculosis, ------ 11	5	2	4	0	0	0	0	0	0
		Died, other, ---------- 0	0	0	0	0	0	0	0	0	0
		No data, ---------- 48	0	17	12	7	8	2	2	0	0
	Unimproved, ---------- 100= 40.5%	Improved, ---------- 20	0	8	7	4	1	0	0	0	0
		Stationary, ---------- 11	0	2	7	0	1	1	0	0	0
		Progressive, ---------- 1	0	0	1	0	0	0	0	0	0
		Died, tuberculosis, ------ 27	14	8	3	2	0	0	0	0	0
		Died, other, ---------- 2	1	0	1	0	0	0	0	0	0
		No data, ---------- 39	0	25	7	6	1	0	0	0	0

UPFOLLOW JANUARY 1 TO JULY 1, 1915, OF 598 DISPENSARY CASES DISCHARGED BECAUSE OF "REMOVAL"—Continued.

Admitted as	Discharged as	Upfollowed as	Interval between Discharge and Last Upfollow.							
			Less than 6 Mos.	6-12 Mos.	12-18 Mos.	18-24 Mos.	24-30 Mos.	30-36 Mos.	36-42 Mos.	Over 42 Mos.	No data.
Far Advanced, ---- 104= 17.4%	Cured, ---- 0= 0.0%	Improved, ---- 0	0	0	0	0	0	0	0	0	0
		Stationary, ---- 0	0	0	0	0	0	0	0	0	0
		Progressive, ---- 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, ---- 0	0	0	0	0	0	0	0	0	0
		Died, other, ---- 0	0	0	0	0	0	0	0	0	0
		No data, ---- 0	0	0	0	0	0	0	0	0	0
	Apparently Cured, --- 0= 0.0%	Improved, ---- 0	0	0	0	0	0	0	0	0	0
		Stationary, ---- 0	0	0	0	0	0	0	0	0	0
		Progressive, ---- 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, ---- 0	0	0	0	0	0	0	0	0	0
		Died, other, ---- 0	0	0	0	0	0	0	0	0	0
		No data, ---- 0	0	0	0	0	0	0	0	0	0
	Arrested, ---- 0= 0.0%	Improved, ---- 0	0	0	0	0	0	0	0	0	0
		Stationary, ---- 0	0	0	0	0	0	0	0	0	0
		Progressive, ---- 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, ---- 0	0	0	0	0	0	0	0	0	0
		Died, other, ---- 0	0	0	0	0	0	0	0	0	0
		No data, ---- 0	0	0	0	0	0	0	0	0	0
	Apparently Arrested,-- 0= 0.0%	Improved, ---- 0	0	0	0	0	0	0	0	0	0
		Stationary, ---- 0	0	0	0	0	0	0	0	0	0
		Progressive, ---- 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, ---- 0	0	0	0	0	0	0	0	0	0
		Died, other, ---- 0	0	0	0	0	0	0	0	0	0
		No data, ---- 0	0	0	0	0	0	0	0	0	0
	Improved, ---- 27= 26.0%	Improved, ---- 8	0	2	3	1	0	1	1	0	0
		Stationary, ---- 6	0	5	0	0	1	0	0	0	0
		Progressive, ---- 3	0	2	1	0	0	0	0	0	0
		Died, tuberculosis, ---- 1	0	1	0	0	0	0	0	0	0
		Died, other, ---- 0	0	0	0	0	0	0	0	0	0
		No data, ---- 9	0	4	2	2	1	0	0	0	0

	Unimproved, --------- 77= 74.0%	Improved, ----------	5	0	1	2	1	1	0	0	0	0
		Stationary, ----------	5	0	3	1	1	0	0	0	0	0
		Progressive, ----------	5	0	1	3	1	0	0	0	0	0
		Died, tuberculosis, ------	46	28	10	5	1	0	1	0	0	1
		Died, other, ----------	0	0	0	0	0	0	0	0	0	0
		No data, ----------	16	0	8	1	5	2	0	0	0	0
Glands, ---------- 2= 0.3%	Improved, ---------- 2=100.0%	No data, ----------	2	0	0	0	0	2	0	0	0	0

UPFOLLOW IN FIRST HALE OF 1915 OF CASES DISCHARGED FOR "REMOVAL."

	Average Age.	Average Dispensary Attendance.
Incipient,	M., 20.8 years.	M., 17.2 months.
	F., 23.6 years.	F., 8.5 months.
Moderately Advanced,	M., 32.7 years.	M., 8.2 months.
	F., 30.2 years.	F., 11.7 months.
Far Advanced,	M., 36.1 years.	M., 7.1 months.
	F., 30.4 years.	F., 4.6 months.
Glands,	M., 10.0 years.	M., 2.0 months.
	F., 10.0 years.	F., 2.0 months.

UPFOLLOW JULY 1, 1915, TO JANUARY 1916, OF 565 DISPENSARY CASES DISCHARGED BECAUSE OF "REMOVAL."

Admitted as	Discharged as	Upfollowed as	Interval between Discharge and Last Upfollow.							
			Less than 6 Mos.	6-12 Mos.	12-18 Mos.	18-24 Mos.	24-30 Mos.	30-36 Mos.	36-42 Mos.	Over 42 Mos.	No data.
Incipient, 225= 39.8%	Cured, 1= 0.4%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 1	0	1	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Apparently Cured, 0= 1.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Arrested, 7= 3.1%	Improved, 5	0	1	2	0	0	1	0	1	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 2	0	1	0	1	0	0	0	0	0
	Apparently Arrested, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Improved, 156= 69.3%	Improved, 88	0	32	5	10	8	9	20	4	0
		Stationary, 28	0	12	5	3	0	4	4	0	0
		Progressive, 4	0	3	0	0	1	0	0	0	0
		Died, tuberculosis, 5	2	0	2	0	0	1	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 31	0	21	5	3	1	1	0	0	0

	Unimproved, ---------- 61= 27.1%	Improved, ---------- 26	0	9	4	4	4	2	1	2	0
		Stationary, ---------- 12	0	5	2	1	0	0	4	0	0
		Progressive, ---------- 4	0	2	1	0	0	1	0	0	0
		Died, tuberculosis, ------ 4	1	2	1	0	0	0	0	0	0
		Died, other, ---------- 2	1	0	0	0	0	1	0	0	0
		No data, ---------- 13	0	6	1	5	1	0	0	0	0
	Cured, ---------- 0= 0.0%	Improved, ---------- 0	0	0	0	0	0	0	0	0	0
		Stationary, ---------- 0	0	0	0	0	0	0	0	0	0
		Progressive, ---------- 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, ------ 0	0	0	0	0	0	0	0	0	0
		Died, other, ---------- 0	0	0	0	0	0	0	0	0	0
		No data, ---------- 0	0	0	0	0	0	0	0	0	0
	Apparently Cured, --- 0= 0.0%	Improved, ---------- 0	0	0	0	0	0	0	0	0	0
		Stationary, ---------- 0	0	0	0	0	0	0	0	0	0
		Progressive, ---------- 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, ------ 0	0	0	0	0	0	0	0	0	0
		Died, other, ---------- 0	0	0	0	0	0	0	0	0	0
		No data, ---------- 0	0	0	0	0	0	0	0	0	0
	Arrested, ---------- 2= 0.9%	Improved, ---------- 1	0	0	0	0	1	0	0	0	0
		Stationary, ---------- 0	0	0	0	0	0	0	0	0	0
		Progressive, ---------- 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, ------ 0	0	0	0	0	0	0	0	0	0
		Died, other, ---------- 0	0	0	0	0	0	0	0	0	0
Moderately Advanced, - 330= 40.7%		No data, ---------- 1	0	1	0	0	0	0	0	0	0
	Apparently Arrested,-- 0= 0.0%	Improved, ---------- 0	0	0	0	0	0	0	0	0	0
		Stationary, ---------- 0	0	0	0	0	0	0	0	0	0
		Progressive, ---------- 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, ------ 0	0	0	0	0	0	0	0	0	0
		Died, other, ---------- 0	0	0	0	0	0	0	0	0	0
		No data, ---------- 0	0	0	0	0	0	0	0	0	0
	Improved, ---------- 135= 58.7%	Improved, ---------- 63	0	18	13	8	5	4	13	2	0
		Stationary, ---------- 25	0	8	5	2	3	2	4	1	0
		Progressive, ---------- 8	0	2	0	3	1	1	1	0	0
		Died, tuberculosis, ------ 8	3	2	0	0	3	0	0	0	0
		Died, other, ---------- 0	0	0	0	0	0	0	0	0	0
		No data, ---------- 31	0	20	3	3	3	0	2	0	0
	Unimproved, ---------- 93= 40.4%	Improved, ---------- 40	0	13	8	4	5	2	7	1	0
		Stationary, ---------- 8	0	5	1	0	0	2	0	0	0
		Progressive, ---------- 6	0	3	1	0	1	0	1	0	0
		Died, tuberculosis, ------ 12	6	2	3	0	0	1	0	0	0
		Died, other, ---------- 0	0	0	0	0	0	0	0	0	0
		No data, ---------- 27	0	17	4	5	1	0	0	0	0

UPFOLLOW JULY 1, 1915, TO JANUARY 1, 1916, OF 565 DISPENSARY CASES DISCHARGED BECAUSE OF "REMOVAL"—Continued.

Admitted as	Discharged as	Upfollowed as	Interval between Discharge and Last Upfollow.							
			Less than 6 Mos.	6-12 Mos.	12-18 Mos.	18-24 Mos.	24-30 Mos.	30-36 Mos.	36-42 Mos.	Over 42 Mos.	No data.
Far Advanced, ... 106= 18.8%	Cured, ... 0= 0.0%	Improved, ... 0	0	0	0	0	0	0	0	0	0
		Stationary, ... 0	0	0	0	0	0	0	0	0	0
		Progressive, ... 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, ... 0	0	0	0	0	0	0	0	0	0
		Died, other, ... 0	0	0	0	0	0	0	0	0	0
		No data, ... 0	0	0	0	0	0	0	0	0	0
	Apparently Cured, ... 0= 0.0%	Improved, ... 0	0	0	0	0	0	0	0	0	0
		Stationary, ... 0	0	0	0	0	0	0	0	0	0
		Progressive, ... 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, ... 0	0	0	0	0	0	0	0	0	0
		Died, other, ... 0	0	0	0	0	0	0	0	0	0
		No data, ... 0	0	0	0	0	0	0	0	0	0
	Arrested, ... 1= 0.9%	Improved, ... 1	0	0	0	1	0	0	0	0	0
		Stationary, ... 0	0	0	0	0	0	0	0	0	0
		Progressive, ... 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, ... 0	0	0	0	0	0	0	0	0	0
		Died, other, ... 0	0	0	0	0	0	0	0	0	0
		No data, ... 0	0	0	0	0	0	0	0	0	0
	Apparently Arrested,.. 0= 0.0%	Improved, ... 0	0	0	0	0	0	0	0	0	0
		Stationary, ... 0	0	0	0	0	0	0	0	0	0
		Progressive, ... 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, ... 0	0	0	0	0	0	0	0	0	0
		Died, other, ... 0	0	0	0	0	0	0	0	0	0
		No data, ... 0	0	0	0	0	0	0	0	0	0
	Improved, ... 19= 17.9%	Improved, ... 7	0	4	1	0	1	0	1	0	0
		Stationary, ... 2	0	0	2	0	0	0	0	0	0
		Progressive, ... 2	0	0	1	0	0	1	0	0	0
		Died, tuberculosis, ... 3	0	0	1	0	1	0	1	0	0
		Died, other, ... 0	0	0	0	0	0	0	0	0	0
		No data, ... 5	0	2	0	0	2	1	0	0	0

	Unimproved, ---------- 80= 81.1%	Improved,	8	0	4	1	2	0	0	1	0	0
		Stationary,	3	0	2	0	0	0	1	0	0	0
		Progressive,	10	0	8	1	0	0	0	1	0	0
		Died, tuberculosis,	55	39	13	1	1	0	0	0	0	1
		Died, other,	2	1	1	0	0	0	0	0	0	0
		No data,	8	0	5	2	0	0	0	0	1	0
Glands, ---------- 4= 0.7%	Improved, ---------- 4=100.0%	Improved,	3	0	2	0	0	0	1	0	0	0
		Stationary,	1	0	1	0	0	0	0	0	0	0

UPFOLLOW IN LAST HALF OF 1915 OF CASES DISCHARGED FOR "REMOVAL."

Average Age.

Incipient,	M.,	21.7 years.
	F.,	23.5 years.
Moderately Advanced,	M.,	33.0 years.
	F.,	28.8 years.
Far Advanced,	M.,	35.7 years.
	F.,	32.1 years.
Glands,	M.,	7.0 years.
	F.,	10.7 years.

Average Dispensary Attendance.

Incipient,	M.,	9.6 months.
	F.,	10.3 months.
Moderately Advanced,	M.,	9.4 months.
	F.,	10.3 months.
Far Advanced,	M.,	4.8 months.
	F.,	4.8 months.
Glands,	M.,	14.0 months.
	F.,	12.3 months.

Weight.

	Total.	No Data.	Gain.	Loss.	Stationary.
Incipient,	214	64	106	21	23
Moderately Advanced,	210	76	76	32	26
Far Advanced,	46	13	11	13	9
Glands,	4	0	4	0	0

Sputum.

	Total.	No Data.	Not Examined.	Positive.	Negative.
Incipient,	214	33	116	5	60
Moderately Advanced,	210	39	97	19	55
Far Advanced,	46	9	27	8	2
Glands,	4	0	4	0	0

UPFOLLOW JANUARY 1 TO JULY 1, 1915, OF 265 DISPENSARY CASES DISCHARGED FOR "NON-COMPLIANCE."

Admitted as	Discharged as	Upfollowed as	Interval between Discharge and Last Upfollow.							
			Less than 6 Mos.	6-12 Mos.	12-18 Mos.	18-24 Mos.	24-30 Mos.	30-36 Mos.	36-42 Mos.	Over 42 Mos.	No data.
Incipient, 95=35.9%	Cured, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Apparently Cured, 2= 2.1%	Improved, 2	0	1	0	0	1	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Arrested, 3= 3.2%	Improved, 1	0	1	0	0	0	0	0	0	0
		Stationary, 1	0	1	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 1	0	0	0	1	0	0	0	0	0
	Apparently Arrested, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Improved, 52= 54.7%	Improved, 33	0	27	3	2	1	0	0	0	0
		Stationary, 9	0	7	2	0	0	0	0	0	0
		Progressive, 4	0	1	1	0	0	2	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 6	0	2	3	1	0	0	0	0	0

	Unimproved, ---------- 38= 40.0%	Improved, ---------- 21	0	14	2	4	1	0	0	0	0
		Stationary, ---------- 6	0	4	2	0	0	0	0	0	0
		Progressive, ---------- 2	0	2	0	0	0	0	0	0	0
		Died, tuberculosis, ------ 2	2	0	0	0	0	0	0	0	0
		Died, other, ---------- 0	0	0	0	0	0	0	0	0	0
		No data, ---------- 7	0	5	1	1	0	0	0	0	0
	Cured, ---------- 0= 0.0%	Improved, ---------- 0	0	0	0	0	0	0	0	0	0
		Stationary, ---------- 0	0	0	0	0	0	0	0	0	0
		Progressive, ---------- 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, ------ 0	0	0	0	0	0	0	0	0	0
		Died, other, ---------- 0	0	0	0	0	0	0	0	0	0
		No data, ---------- 0	0	0	0	0	0	0	0	0	0
	Apparently Cured, --- 0= 0.0%	Improved, ---------- 0	0	0	0	0	0	0	0	0	0
		Stationary, ---------- 0	0	0	0	0	0	0	0	0	0
		Progressive, ---------- 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, ------ 0	0	0	0	0	0	0	0	0	0
		Died, other, ---------- 0	0	0	0	0	0	0	0	0	0
		No data, ---------- 0	0	0	0	0	0	0	0	0	0
	Arrested, ---------- 1= 0.8%	Improved, ---------- 1	0	1	0	0	0	0	0	0	0
		Stationary, ---------- 0	0	0	0	0	0	0	0	0	0
		Progressive, ---------- 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, ------ 0	0	0	0	0	0	0	0	0	0
		Died, other, ---------- 0	0	0	0	0	0	0	0	0	0
		No data, ---------- 0	0	0	0	0	0	0	0	0	0
Moderately Advanced, 122= 46.0%	Apparently Arrested,-- 0= 0.0%	Improved, ---------- 0	0	0	0	0	0	0	0	0	0
		Stationary, ---------- 0	0	0	0	0	0	0	0	0	0
		Progressive, ---------- 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, ------ 0	0	0	0	0	0	0	0	0	0
		Died, other, ---------- 0	0	0	0	0	0	0	0	0	0
		No data, ---------- 0	0	0	0	0	0	0	0	0	0
	Improved, ---------- 56= 45.9%	Improved, ---------- 37	0	20	12	1	3	1	0	0	0
		Stationary, ---------- 9	0	5	2	1	1	0	0	0	0
		Progressive, ---------- 5	0	3	2	0	0	0	0	0	0
		Died, tuberculosis, ------ 1	1	0	0	0	0	0	0	0	0
		Died, other, ---------- 0	0	0	0	0	0	0	0	0	0
		No data, ---------- 4	0	3	0	1	0	0	0	0	0
	Unimproved, ---------- 65= 53.2%	Improved, ---------- 27	0	23	4	0	0	0	0	0	0
		Stationary, ---------- 10	0	7	2	1	0	0	0	0	0
		Progressive, ---------- 6	0	3	3	0	0	0	0	0	0
		Died, tuberculosis, ------ 10	4	6	0	0	0	0	0	0	0
		Died, other, ---------- 2	2	0	0	0	0	0	0	0	0
		No data, ---------- 10	0	3	4	1	0	2	0	0	0

UPFOLLOW JANUARY 1 TO JULY 1, 1915, OF 265 DISPENSARY CASES DISCHARGED FOR "NON-COMPLIANCE" —Continued.

Admitted as	Discharged as	Upfollowed as	Interval between Discharge and Last Upfollow.							
			Less than 6 Mos.	6-12 Mos.	12-18 Mos.	18-24 Mos.	24-30 Mos.	30-36 Mos.	36-42 Mos.	Over 42 Mos.	No data.
Far Advanced, 48=18.1%	Cured, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Apparently Cured, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Arrested, 1= 2.1%	Improved, 1	0	0	1	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Apparently Arrested, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Improved, 11= 22.9%	Improved, 2	0	2	0	0	0	0	0	0	6
		Stationary, 6	0	5	0	1	0	0	0	0	0
		Progressive, 1	0	0	1	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 2	0	1	1	0	0	0	0	0	0

Unimproved, ---------- 36= 75.0%	Improved, ----------	5	0	2	1	1	1	0	0	0	0
	Stationary, ----------	3	0	2	1	0	0	0	0	0	0
	Progressive, ----------	4	0	3	1	0	0	0	0	0	0
	Died, tuberculosis, ------	15	10	2	3	0	0	0	0	0	0
	Died, other, ----------	0	0	0	0	0	0	0	0	0	0
	No data, ----------	9	0	4	4	1	0	0	0	0	0

UPFOLLOW IN FIRST HALF OF 1915 CASES DISCHARGED FOR "NON-COMPLIANCE."

Average Age.

Incipient, ----------	M.,	27.3 years.
	F.,	19.5 years.
Moderately Advanced, ----	M.,	31.2 years.
	F.,	29.1 years.
Far Advanced, ----------	M.,	37.8 years.
	F.,	33.1 years.

Average Dispensary Attendance.

Incipient, ----------	M.,	6.7 months.
	F.,	9.1 months.
Moderately Advanced, ----	M.,	6.3 months.
	F.,	9.2 months.
Far Advanced, ----------	M.,	4.1 months.
	F.,	4.2 months.

	Weight.				
	Total.	No Data.	Gain.	Loss.	Stationary.
Incipient, ----------	93	15	56	13	9
Moderately Adavnced, --------	109	14	61	21	13
Far Advanced, ----------	33	11	9	7	6

	Sputum.				
	Total.	No Data.	Not Examined.	Positive.	Negative.
Incipient, ----------	93	12	56	2	23
Moderately Advanced, --------	109	7	54	13	35
Far Advanced, ----------	33	6	19	1	7

UPFOLLOW JULY 1, 1915, TO JANUARY 1, 1916, OF 217 DISPENSARY CASES DISCHARGED FOR "NON-COMPLINACE."

Admitted as	Discharged as	Upfollowed as	Interval between Discharge and Last Upfollow.							
			Less than 6 Mos.	6-12 Mos.	12-18 Mos.	18-24 Mos.	24-30 Mos.	30-36 Mos.	36-42 Mos.	Over 42 Mos.	No data.
Incipient, 86= 39.6%	Cured, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Apparently Cured, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Arrested, 2= 2.3%	Improved, 1	0	0	1	0	0	0	0	0	0
		Stationary, 1	0	0	0	1	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Apparently Arrested, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Improved, 49= 57.0%	Improved, 32	0	5	18	5	2	2	0	0	0
		Stationary, 8	0	2	4	1	0	0	1	0	0
		Progressive, 3	0	2	1	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 6	0	2	3	1	0	0	0	0	0

Moderately Advanced, 108= 49.8%	Unimproved, 35= 40.7%	Improved, 20	0	6	10	3	1	0	0	0	0
		Stationary, 7	0	1	3	2	1	0	0	0	0
		Progressive, 2	0	1	0	0	0	0	1	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 6	0	5	1	0	0	0	0	0	0
	Cured, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Apparently Cured, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Arrested, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Apparently Arrested, 1= 0.9%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 1	0	1	0	0	0	0	0	0	0
	Improved, 44= 40.7%	Improved, 24	0	7	14	1	1	1	0	0	0
		Stationary, 11	0	4	5	1	0	0	1	0	0
		Progressive, 2	0	1	0	1	0	0	0	0	0
		Died, tuberculosis, 2	1	0	1	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 5	0	3	1	0	1	0	0	0	0
	Unimproved, 63= 58.3%	Improved, 25	0	7	13	2	2	0	1	0	0
		Stationary, 16	0	2	11	1	2	0	0	0	0
		Progressive, 7	0	6	0	1	0	0	0	0	0
		Died, tuberculosis, 5	3	1	0	0	0	1	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 10	0	5	2	0	2	0	1	0	0

UPFOLLOW JULY 1, 1915, TO JANUARY 1, 1916, OF 217 DISPENSARY CASES DISCHARGED FOR "NON-ATTENDANCE—" Continued.

Admitted as	Discharged as	Upfollowed as	Interval between Discharge and Last Upfollow.							
			Less than 6 Mos.	6-12 Mos.	12-18 Mos.	18-24 Mos.	24-30 Mos.	30-36 Mos.	36-42 Mos.	Over 42 Mos.	No data.
Far Advanced, 23= 10.6%	Cured, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Apparently Cured, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Arrested, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Apparently Arrested, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Improved, 8= 34.8%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 4	0	1	0	1	2	0	0	0	0
		Progressive, 1	0	0	1	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 3	0	1	1	0	1	0	0	0	0

Unimproved, ---------- 15= 65.2%	Improved, ----------	2	0	1	0	0	1	0	0	0	0
	Stationary, ----------	0	0	0	0	0	0	0	0	0	0
	Progressive, ----------	2	0	1	1	0	0	0	0	0	0
	Died, tuberculosis, ------	9	4	3	2	0	0	0	0	0	0
	Died, other, ----------	0	0	0	0	0	0	0	0	0	0
	No data, ----------	2	0	1	1	0	0	0	0	0	0

UPFOLLOW IN LAST HALF OF 1915 OF CASES DISCHARGED FOR "NON-COMPLIANCE."

Average Age.

Incipient, ----------	M.,	24.6 years.
	F.,	23.1 years.
Moderately Advanced, ----	M.,	30.0 years.
	F.,	25.8 years.
Far Advanced, ----------	M.,	36.3 years.
	F.,	35.2 years.

Average Dispensary Attendance.

Incipient, ----------	M.,	9.2 months.
	F.,	9.0 months.
Moderately Advanced, ----	M.,	6.7 months.
	F.,	8.5 months.
Far Advanced, ----------	M.,	3.2 months.
	F.,	5.6 months.

Weight.

	Total.	No Data.	Gain.	Loss.	Stationary.
Incipient, ----------	86	14	55	9	8
Moderately Advanced, --------	101	17	54	13	17
Far Advanced, ----------	14	6	1	4	3

Sputum.

	Total.	No Data.	Not Examined.	Positive.	Negative.
Incipient, ----------	86	7	55	1	23
Moderately Advanced, --------	101	12	52	9	28
Far Advanced, ----------	14	6	5	0	3

UPFOLLOW JANUARY 1 TO JULY 1, 1915, OF 192 CASES DISCHARGED AS "REFERRED TO FAMILY PHYSICIAN."

Admitted as	Discharged as	Upfollowed as	Interval between Discharge and Last Upfollow.								
			Less than 6 Mos.	6-12 Mos.	12-18 Mos.	18-24 Mos.	24-30 Mos.	30-36 Mos.	36-42 Mos.	Over 42 Mos.	No data.
Incipient, 82= 42.7%	Cured, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Apparently Cured, 1= 1.2%	Improved, 1	0	1	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Arrested, 7= 8.5%	Improved, 5	0	1	1	2	0	1	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 1	0	0	0	1	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 1	0	1	0	0	0	0	0	0	0
	Apparently Arrested, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Improved, 55= 67.1%	Improved, 36	0	9	16	7	4	0	0	0	0
		Stationary, 7	0	1	6	0	0	0	0	0	0
		Progressive, 3	0	1	1	1	0	0	0	0	0
		Died, tuberculosis, 1	0	0	1	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 8	0	2	4	0	1	1	0	0	0

	Unimproved, ---------- 19= 23.2%	Improved, ---------- 14	0	9	2	0	1	1	1	0	0
		Stationary, ---------- 2	0	0	1	1	0	0	0	0	0
		Progressive, ---------- 1	0	1	0	0	0	0	0	0	0
		Died, tuberculosis, ------ 0	0	0	0	0	0	0	0	0	0
		Died, other, ---------- 0	0	0	0	0	0	0	0	0	0
		No data, ---------- 2	0	0	1	0	1	0	0	0	0
	Cured, ---------- 0= 0.0%	Improved, ---------- 0	0	0	0	0	0	0	0	0	0
		Stationary, ---------- 0	0	0	0	0	0	0	0	0	0
		Progressive, ---------- 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, ------ 0	0	0	0	0	0	0	0	0	0
		Died, other, ---------- 0	0	0	0	0	0	0	0	0	0
		No data, ---------- 0	0	0	0	0	0	0	0	0	0
	Apparently Cured, --- 0= 0.0%	Improved, ---------- 0	0	0	0	0	0	0	0	0	0
		Stationary, ---------- 0	0	0	0	0	0	0	0	0	0
		Progressive, ---------- 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, ------ 0	0	0	0	0	0	0	0	0	0
		Died, other, ---------- 0	0	0	0	0	0	0	0	0	0
		No data, ---------- 0	0	0	0	0	0	0	0	0	0
	Arrested, ---------- 5= 6.2%	Improved, ---------- 3	0	2	0	1	0	0	0	0	0
		Stationary, ---------- 1	0	0	0	0	1	0	0	0	0
		Progressive, ---------- 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, ------ 0	0	0	0	0	0	0	0	0	0
		Died, other, ---------- 0	0	0	0	0	0	0	0	0	0
		No data, ---------- 1	0	1	0	0	0	0	0	0	0
Moderately Advanced, - 81= 42.2%	Apparently Arrested,- 0= 0.0%	Improved, ---------- 0	0	0	0	0	0	0	0	0	0
		Stationary, ---------- 0	0	0	0	0	0	0	0	0	0
		Progressive, ---------- 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, ------ 0	0	0	0	0	0	0	0	0	0
		Died, other, ---------- 0	0	0	0	0	0	0	0	0	0
		No data, ---------- 0	0	0	0	0	0	0	0	0	0
	Improved, ---------- 36= 44.0%	Improved, ---------- 27	0	11	8	3	4	1	0	0	0
		Stationary, ---------- 4	0	1	1	0	0	0	2	0	0
		Progressive, ---------- 3	0	1	2	0	0	0	0	0	0
		Died, tuberculosis, ------ 0	0	0	0	0	0	0	0	0	0
		Died, other, ---------- 0	0	0	0	0	0	0	0	0	0
		No data, ---------- 2	0	2	0	0	0	0	0	0	0
	Unimproved, ---------- 40= 49.4%	Improved, ---------- 15	0	6	5	2	1	0	0	1	0
		Stationary, ---------- 9	0	1	5	3	0	0	0	0	0
		Progressive, ---------- 6	0	3	1	1	1	0	0	0	0
		Died, tuberculosis, ------ 3	2	0	1	0	0	0	0	0	0
		Died, other, ---------- 3	1	2	0	0	0	0	0	0	0
		No data, ---------- 4	0	2	1	1	0	0	0	0	0

UPFOLLOW JANUARY 1 TO JULY 1, 1915, OF 192 CASES DISCHARGED AS "REFERRED TO FAMILY PHYSICIAN"—Continued.

Admitted as	Discharged as	Upfollowed as	Interval between Discharge and Last Upfollow.							
			Less than 6 Mos.	6-12 Mos.	12-18 Mos.	18-24 Mos.	24-30 Mos.	30-36 Mos.	36-42 Mos.	Over 42 Mos.	No data.
Far Advanced, 29= 15.1%	Cured, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Apparently Cured, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Arrested, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Apparently Arrested, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Improved, 9= 31.0%	Improved, 5	0	3	1	0	1	0	0	0	0
		Stationary, 1	0	0	1	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 2	2	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 1	0	0	1	0	0	0	0	0	0

Unimproved, ---------- 20= 69.0%	Improved, ----------	3	0	2	0	0	1	0	0	0	0
	Stationary, ----------	2	0	1	0	1	0	0	0	0	0
	Progressive, ----------	4	0	2	2	0	0	0	0	0	0
	Died, tuberculosis, ----------	9	5	3	0	1	0	0	0	0	0
	Died, other, ----------	0	0	0	0	0	0	0	0	0	0
	No data, ----------	2	0	1	0	1	0	0	0	0	0

UPFOLLOW IN FIRST HALF OF 1915 OF CASES DISCHARGED AS "REFERRED TO FAMILY PHYSICIAN."

Average Age.

Incipient, ----------	M.,	19.0 years.
	F.,	20.9 years.
Moderately Advanced, ----	M.,	29.7 years.
	F.,	27.0 years.
Far Advanced, ----------	M.,	37.4 years.
	F.,	35.0 years.

Average Dispensary Attendance.

Incipient, ----------	M.,	9.6 months.
	F.,	9.5 months.
Moderately Advanced, ----	M.,	5.2 months.
	F.,	8.5 months.
Far Advanced, ----------	M.,	6.6 months.
	F.,	4.8 months.

Weight.

	Total.	No Data.	Gain.	Loss.	Stationary.
Incipient, ----------	81	12	59	4	6
Moderately Advanced, --------	75	7	47	11	10
Far Advanced, ----------	18	3	4	10	1

Sputum.

	Total.	No Data.	Not Examined.	Positive.	Negative.
Incipient, ----------	81	9	58	0	14
Moderately Advanced, --------	75	5	39	5	26
Far Advanced, ----------	18	1	14	0	3

UPFOLLOW JULY 1, 1915, TO JANUARY 1, 1916, OF 230 CASES DISCHARGED AS "REFERRED TO FAMILY PHYSICIAN."

Admitted as	Discharged as	Upfollowed as	Interval between Discharge and Last Upfollow.							
			Less than 6 Mos.	6-12 Mos.	12-18 Mos.	18-24 Mos.	24-30 Mos.	30-36 Mos.	36-42 Mos.	Over 42 Mos.	No data.
Incipient, 96= 41.7%	Cured, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Apparently Cured, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Arrested, 7= 7.3%	Improved, 6	0	2	2	2	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 1	0	1	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Apparently Arrested, 1= 1.0%	Improved, 1	0	0	0	0	1	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Improved, 61= 63.5%	Improved, 44	0	15	9	6	11	2	1	0	0
		Stationary, 9	0	4	1	2	1	0	1	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 2	1	1	0	0	0	0	0	0	0
		Died, other, 1	0	0	1	0	0	0	0	0	0
		No data, 5	0	4	0	0	1	0	0	0	0

	Unimproved, ---------- 27= 28.1%	Improved, ---------- 16	0	5	4	4	2	0	0	1	0
		Stationary, ---------- 3	0	2	0	1	0	0	0	0	0
		Progressive, ---------- 3	0	3	0	0	0	0	0	0	0
		Died, tuberculosis, ------ 1	0	1	0	0	0	0	0	0	0
		Died, other, ---------- 0	0	0	0	0	0	0	0	0	0
		No data, ---------- 4	0	3	1	0	0	0	0	0	0
	Cured, ---------- 0= 0.0%	Improved, ---------- 0	0	0	0	0	0	0	0	0	0
		Stationary, ---------- 0	0	0	0	0	0	0	0	0	0
		Progressive, ---------- 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, ------ 0	0	0	0	0	0	0	0	0	0
		Died, other, ---------- 0	0	0	0	0	0	0	0	0	0
		No data, ---------- 0	0	0	0	0	0	0	0	0	0
	Apparently Cured, --- 0= 0.0%	Improved, ---------- 0	0	0	0	0	0	0	0	0	0
		Stationary, ---------- 0	0	0	0	0	0	0	0	0	0
		Progressive, ---------- 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, ------ 0	0	0	0	0	0	0	0	0	0
		Died, other, ---------- 0	0	0	0	0	0	0	0	0	0
		No data, ---------- 0	0	0	0	0	0	0	0	0	0
	Arrested, ---------- 2= 2.0%	Improved, ---------- 1	0	0	0	0	1	0	0	0	0
		Stationary, ---------- 1	0	0	1	0	0	0	0	0	0
		Progressive, ---------- 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, ------ 0	0	0	0	0	0	0	0	0	0
		Died, other, ---------- 0	0	0	0	0	0	0	0	0	0
		No data, ---------- 0	0	0	0	0	0	0	0	0	0
Moderately Advanced, - 98= 42.6%	Apparently Arrested, - 0= 0.0%	Improved, ---------- 0	0	0	0	0	0	0	0	0	0
		Stationary, ---------- 0	0	0	0	0	0	0	0	0	0
		Progressive, ---------- 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, ------ 0	0	0	0	0	0	0	0	0	0
		Died, other, ---------- 0	0	0	0	0	0	0	0	0	0
		No data, ---------- 0	0	0	0	0	0	0	0	0	0
	Improved, ---------- 53= 54.1%	Improved, ---------- 39	0	14	9	6	10	0	0	0	0
		Stationary, ---------- 6	0	4	1	1	0	0	0	0	0
		Progressive, ---------- 4	0	2	1	0	1	0	0	0	0
		Died, tuberculosis, ------ 2	2	0	0	0	0	0	0	0	0
		Died, other, ---------- 0	0	0	0	0	0	0	0	0	0
		No data, ---------- 2	0	1	0	0	1	0	0	0	0
	Unimproved, ---------- 43= 43.9%	Improved, ---------- 20	0	7	3	8	1	0	1	0	0
		Stationary, ---------- 11	0	1	3	4	1	0	1	1	0
		Progressive, ---------- 4	0	1	1	2	0	0	0	0	0
		Died, tuberculosis, ------ 6	3	3	0	0	0	0	0	0	0
		Died, other, ---------- 1	1	0	0	0	0	0	0	0	0
		No data, ---------- 1	0	1	0	0	0	0	0	0	0

UPFOLLOW JULY 1, 1915, TO JANUARY 1, 1916, OF 230 CASES DISCHARGED AS "REFERRED TO FAMILY PHYSICIAN"—Continued.

Admitted as	Discharged as	Upfollowed as	Interval between Discharge and Last Upfollow.								
			Less than 6 Mos.	6-12 Mos.	12-18 Mos.	18-24 Mos.	24-30 Mos.	30-36 Mos.	36-42 Mos.	Over 42 Mos.	No data.
Far Advanced, 34= 14.8%	Cured, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Apparently Cured, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Arrested, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Apparently Arrested, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Improved, 8= 23.5%	Improved, 4	0	2	0	1	0	0	1	0	0
		Stationary, 2	0	0	0	1	1	0	0	0	0
		Progressive, 1	0	0	1	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 1	0	1	0	0	0	0	0	0	0

	Unimproved, --------- 26= 76.5%	Improved, ----------	4	0	2	1	0	1	0	0	0	0
		Stationary, ----------	3	0	1	1	0	1	0	0	0	0
		Progressive, ----------	0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, -----	17	9	4	1	1	0	0	0	0	2
		Died, other, ----------	0	0	0	0	0	0	0	0	0	0
		No data, ----------	2	0	1	0	0	1	0	0	0	0
Glands, ---------- 2= 0.9%	Improved, ---------- 2=100.0%	Improved, ----------	2	0	1	0	1	0	0	0	0	0

UPFOLLOW IN LAST HALF OF 1915 OF CASES DISCHARGED AS "REFERRED TO FAMILY PHYSICIAN."

Average Age.

Incipient, ----------	M.,	22.6 years.
	F.,	24.0 years.
Moderately Advanced, ----	M.,	33.1 years.
	F.,	30.3 years.
Far Advanced, ----------	M.,	33.7 years.
	F.,	32.4 years.
Glands, ----------	M.,	18.0 years.
	F.,	17.0 years.

Average Dispensary Attendance.

Incipient, ----------	M.,	11.4 months.
	F.,	10.6 months.
Moderately Advanced, ----	M.,	5.1 months.
	F.,	7.1 months.
Far Advanced, ----------	M.,	3.4 months.
	F.,	6.3 months.
Glands, ----------	M.,	2.0 months.
	F.,	2.0 months.

	Weight.				
	Total.	No Data.	Gain.	Loss.	Stationary.
Incipient, ----------	92	12	62	5	13
Moderately Advanced, --------	89	9	57	14	9
Far Advanced, ----------	17	3	8	2	4
Glands, ----------	2	1	0	0	1

	Sputum.			
	Total.	No Data.	Not Examined.	Positive.	Negative.
Incipient, ----------	92	5	49	6	32
Moderately Advanced, --------	89	3	50	6	30
Far Advanced, ----------	17	0	11	2	4
Glands, ----------	2	1	0	0	1

UPFOLLOW JANUARY 1 TO JULY 1, 1915, OF 128 DISPENSARY CASES LOCATED IN INSTITUTIONS OUTSIDE OF THE DEPARTMENT.

Admitted as	Discharged as	Upfollowed as	Interval between Discharge and Last Upfollow.								
			Less than 6 Mos.	6-12 Mos.	12-18 Mos.	18-24 Mos.	24-30 Mos.	30-36 Mos.	36-42 Mos.	Over 42 Mos.	No data.
Incipient, 19= 14.8%	Cured, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Apparently Cured, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Arrested, 2= 10.5%	Improved, 1	0	0	0	0	1	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 1	0	1	0	0	0	0	0	0	0
	Apparently Arrested, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Improved, 8= 42.1%	Improved, 4	0	1	1	0	2	0	0	0	0
		Stationary, 1	0	0	1	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 3	0	1	1	0	0	1	0	0	0

	Unimproved, ---------- 9= 47.4%	Improved,	2	0	2	0	0	0	0	0	0	0
		Died, other,	0	0	0	0	0	0	0	0	0	0
		Progressive,	0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis,	1	0	1	0	0	0	0	0	0	0
		Died, other,	0	0	0	0	0	0	0	0	0	0
		No data,	6	0	4	1	1	0	0	0	0	0
	Cured, ---------- 0= 0.0%	Improved,	0	0	0	0	0	0	0	0	0	0
		Stationary,	0	0	0	0	0	0	0	0	0	0
		Progressive,	0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis,	0	0	0	0	0	0	0	0	0	0
		Died, other,	0	0	0	0	0	0	0	0	0	0
		No data,	0	0	0	0	0	0	0	0	0	0
	Apparently Cured, --- 0= 0.0%	Improved,	0	0	0	0	0	0	0	0	0	0
		Stationary,	0	0	0	0	0	0	0	0	0	0
		Progressive,	0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis,	0	0	0	0	0	0	0	0	0	0
		Died, other,	0	0	0	0	0	0	0	0	0	0
		No data,	0	0	0	0	0	0	0	0	0	0
	Arrested, ---------- 0= 0.0%	Improved,	0	0	0	0	0	0	0	0	0	0
		Stationary,	0	0	0	0	0	0	0	0	0	0
		Progressive,	0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis,	0	0	0	0	0	0	0	0	0	0
		Died, other,	0	0	0	0	0	0	0	0	0	0
		No data,	0	0	0	0	0	0	0	0	0	0
Moderately Advanced, - 54= 42.2%	Apparently Arrested, - 0= 0.0%	Improved,	0	0	0	0	0	0	0	0	0	0
		Stationary,	0	0	0	0	0	0	0	0	0	0
		Progressive,	0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis,	0	0	0	0	0	0	0	0	0	0
		Died, other,	0	0	0	0	0	0	0	0	0	0
		No data,	0	0	0	0	0	0	0	0	0	0
	Improved, ---------- 10= 18.5%	Improved,	3	0	1	0	1	1	0	0	0	0
		Stationary,	2	0	1	0	1	0	0	0	0	0
		Progressive,	1	0	0	1	0	0	0	0	0	0
		Died, tuberculosis,	1	0	1	0	0	0	0	0	0	0
		Died, other,	0	0	0	0	0	0	0	0	0	0
		No data,	3	0	2	0	1	0	0	0	0	0
	Unimproved, ---------- 44= 81.5%	Improved,	10	0	4	2	2	1	1	0	0	0
		Stationary,	2	0	1	0	1	0	0	0	0	0
		Progressive,	4	0	3	0	1	0	0	0	0	0
		Died, tuberculosis,	16	8	4	1	3	0	0	0	0	0
		Died, other,	3	2	0	1	0	0	0	0	0	0
		No data,	9	0	9	0	0	0	0	0	0	0

UPFOLLOW JANUARY 1 TO JULY 1, 1915, OF 128 DISPENSARY CASES LOCATED IN INSTITUTIONS OUTSIDE OF THE DEPARTMENT—Continued.

Admitted as	Discharged as	Upfollowed as	Interval between Discharge and Last Upfollow.							
			Less than 6 Mos.	6-12 Mos.	12-18 Mos.	18-24 Mos.	24-30 Mos.	30-36 Mos.	36-42 Mos.	Over 42 Mos.	No data.
Far Advanced, 55= 43.0%	Cured, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Apparently Cured, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Arrested, 2= 3.6%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 1	0	1	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 1	0	1	0	0	0	0	0	0	0
	Apparently Arrested, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Improved, 3= 5.5%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 1	0	1	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 2	0	2	0	0	0	0	0	0	0

Unimproved, ---------- 50= 90.9%	Improved, ----------	8	0	6	2	0	0	0	0	0	0
	Stationary, ----------	2	0	0	2	0	0	0	0	0	0
	Progressive, ----------	4	0	2	2	0	0	0	0	0	0
	Died, tuberculosis, ------	29	25	4	0	0	0	0	0	0	0
	Died, other, ----------	1	1	0	0	0	0	0	0	0	0
	No data, ----------	6	0	3	2	0	1	0	0	0	0

UPFOLLOW IN FIRST HALF OF 1915 OF CASES LOCATED IN INSTITUTIONS OUTSIDE OF THE DEPARTMENT.

Average Age.

Incipient, ----------	M.,	22.9 years.
	F.,	17.5 years.
Moderately Advanced, -----	M.,	35.0 years.
	F.,	25.1 years.
Far Advanced, ----------	M.,	37.6 years.
	F.,	33.3 years.

Average Dispensary Attendance.

Incipient, ----------	M.,	3.3 months.
	F.,	7.8 months.
Moderately Advanced, -----	M.,	3.4 months.
	F.,	4.7 months.
Far Advanced, ----------	M.,	6.5 months.
	F.,	2.2 months.

	Weight. Total.	No Data.	Gain.	Loss.	Stationary.
Incipient, ----------	18	10	8	0	0
Moderately Advanced, --------	34	12	10	7	5
Far Advanced, ----------	25	9	8	5	3

	Sputum. Total.	No Data.	Not Examined.	Positive.	Negative.
Incipient, ----------	18	5	11	0	2
Moderately Advanced, --------	34	5	22	2	5
Far Advanced, ----------	25	6	13	2	4

UPFOLLOW JULY 1, 1915, TO JANUARY 1, 1916, OF 118 DISPENSARY CASES LOCATED IN INSTITUTIONS OUTSIDE OF THE DEPARTMENT

Admitted as	Discharged as	Upfollowed as	Interval between Discharge and Last Upfollow.							
			Less than 6 Mos.	6-12 Mos.	12-18 Mos.	18-24 Mos.	24-30 Mos.	30-36 Mos.	36-42 Mos.	Over 42 Mos.	No data.
Incipient, 41= 34.7%	Cured, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Apparently Cured, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Arrested, 1= 2.4%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 1	0	1	0	0	0	0	0	0	0
	Apparently Arrested, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Improved, 6= 16.6%	Improved, 1	0	1	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 3	0	1	1	0	1	0	0	0	0
		Died, tuberculosis, 2	2	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0

Moderately Advanced, - 61= 51.7%	Unimproved, ---------- 34= 82.9%	Improved, ----------	3	0	0	2	1	0	0	0	0	0
		Stationary, ----------	0	0	0	0	0	0	0	0	0	0
		Progressive, ----------	3	0	0	2	1	0	0	0	0	0
		Died, tuberculosis, ------	23	19	4	0	0	0	0	0	0	0
		Died, other, ----------	0	0	0	0	0	0	0	0	0	0
		No data, ----------	5	0	2	2	1	0	0	0	0	0
	Cured, ---------- 0= 0.0%	Improved, ----------	0	0	0	0	0	0	0	0	0	0
		Stationary, ----------	0	0	0	0	0	0	0	0	0	0
		Progressive, ----------	0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, ------	0	0	0	0	0	0	0	0	0	0
		Died, other, ----------	0	0	0	0	0	0	0	0	0	0
		No data, ----------	0	0	0	0	0	0	0	0	0	0
	Apparently Cured, --- 0= 0.0%	Improved, ----------	0	0	0	0	0	0	0	0	0	0
		Stationary, ----------	0	0	0	0	0	0	0	0	0	0
		Progressive, ----------	0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, ------	0	0	0	0	0	0	0	0	0	0
		Died, other, ----------	0	0	0	0	0	0	0	0	0	0
		No data, ----------	0	0	0	0	0	0	0	0	0	0
	Arrested, ---------- 0= 0.0%	Improved, ----------	0	0	0	0	0	0	0	0	0	0
		Stationary, ----------	0	0	0	0	0	0	0	0	0	0
		Progressive, ----------	0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, ------	0	0	0	0	0	0	0	0	0	0
		Died, other, ----------	0	0	0	0	0	0	0	0	0	0
		No data, ----------	0	0	0	0	0	0	0	0	0	0
	Apparently Arrested, - 0= 0.0%	Improved, ----------	0	0	0	0	0	0	0	0	0	0
		Stationary, ----------	0	0	0	0	0	0	0	0	0	0
		Progressive, ----------	0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, ------	0	0	0	0	0	0	0	0	0	0
		Died, other, ----------	0	0	0	0	0	0	0	0	0	0
		No data, ----------	0	0	0	0	0	0	0	0	0	0
	Improved, ---------- 22= 36.1%	Improved, ----------	8	0	3	0	1	0	0	2	0	0
		Stationary, ----------	3	0	1	0	0	1	0	0	0	0
		Progressive, ----------	2	0	1	0	1	0	0	0	0	0
		Died, tuberculosis, ------	3	0	2	1	0	0	0	0	0	0
		Died, other, ----------	0	0	0	0	0	0	0	0	0	0
		No data, ----------	6	0	4	0	2	0	0	0	0	0
	Unimproved, ---------- 39= 63.9%	Improved, ----------	13	0	7	3	2	0	0	1	0	0
		Stationary, ----------	5	0	1	2	1	1	0	0	0	0
		Progressive, ----------	6	0	3	3	0	0	0	0	0	0
		Died, tuberculosis, ------	10	6	0	3	0	0	0	0	0	1
		Died, other, ----------	0	0	0	0	0	0	0	0	0	0
		No data, ----------	5	0	4	1	0	0	0	0	0	0

UPFOLLOW JULY 1, 1915, TO JANUARY 1, 1916, OF 118 DISPENSARY CASES LOCATED IN INSTITUTIONS OUTSIDE OF THE DEPARTMENT—Continued.

Admitted as	Discharged as	Upfollowed as	Interval between Discharge and Last Upfollow.							
			Less than 6 Mos.	6-12 Mos.	12-18 Mos.	18-24 Mos.	24-30 Mos.	30-36 Mos.	36-42 Mos.	Over 42 Mos.	No data.
Far Advanced, 16= 13.6%	Cured, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Apparetnly Cured, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Arrested, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Apparently Arrested, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Improved, 9= 56.2%	Improved, 3	0	1	2	0	0	0	0	0	0
		Stationary, 2	0	0	1	0	0	0	0	1	0
		Progressive, 1	0	1	0	0	0	0	0	0	0
		Died, tuberculosis, 1	0	0	0	1	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 2	0	2	0	0	0	0	0	0	0

Unimproved, ----------	7= 43.8%	Improved, ----------	3	0	1	1	1	0	0	0	0	0
		Stationary, ----------	1	0	0	0	1	0	0	0	0	0
		Progressive, ----------	0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, ------	1	0	0	1	0	0	0	0	0	0
		Died, other, ----------	0	0	0	0	0	0	0	0	0	0
		No data, ----------	2	0	0	1	0	1	0	0	0	0

UPFOLLOW IN LAST HALF OF 1915 OF CASES LOCATED IN INSTITUTIONS OUTSIDE OF THE DEPARTMENT.

Average Age.

Incipient, ----------	M.,	30.3 years.
	F.,	11.0 years.
Moderately Advanced, ----	M.,	28.0 years.
	F.,	32.0 years.
Far Advanced, ----------	M.,	34.2 years.
	F.,	26.9 years.

Average Dispensary Attendance.

Incipient, ----------	M.,	6.1 months.
	F.,	4.2 months.
Moderately Advanced, ----	M.,	4.5 months.
	F.,	5.3 months.
Far Advanced, ----------	M.,	2.3 months.
	F.,	2.9 months.

Weight.

	Total.	No Data.	Gain.	Loss.	Stationary.
Incipient, ----------	16	7	6	2	1
Moderately Advanced, --------	48	13	17	14	4
Far Advanced, ----------	14	5	4	4	1

Sputum.

	Total.	No Data.	Not Examined.	Positive.	Negative.
Incipient, ----------	16	3	8	0	5
Moderately Advanced, --------	48	10	22	5	11
Far Advanced, ----------	14	2	7	2	3

NUMBER OF PATIENTS IN THE FAMILIES OF FORMER DISPENSARY PATIENTS.

Upfollow First Half of 1915 of 4,320 Patients.		Upfollow Last Half of 1915 of 4,912 Patients.	
Members in Family Besides Patient.	Patients.	Members in Family Besides Patient.	Patients.
Undetermined,	270	Undetermined,	180
None,	25	None,	264
1,	310	1,	182
2,	421	2,	411
3,	571	3,	612
4,	658	4,	700
5,	627	5,	691
6,	538	6,	646
7,	356	7,	481
8,	236	8,	322
9,	166	9,	232
10,	79	10,	96
11,	36	11,	40
12,	17	12,	36
13,	9	13,	13
14,	5	14,	4
16,	1	15,	0
19,	1	16,	2

INCIDENCE OF TUBERCULOSIS IN FAMILIES OF FORMER DISPENSARY PATIENTS.

Upfollow First Half of 1915 of 4,326 Patients.

Tuberculous Adults in Family of Each Patient.	Patients.	Tuberculous Children in Family of Each Patient.	Patients.
No data,	252	No data,	252
None,	833	None,	2,665
1,	2,853	1,	1,617
2,	341	2,	248
3,	37	3,	115
4,	8	4,	24
5,	2	5,	5

Upfollow Last Half of 1915 of 4,912 Patients.

Tuberculous Adults in Family of Each Patient.	Patients.	Tuberculous Children in Family of Each Patient.	Patients.
No data,	166	No data,	165
None,	3,433	None,	3,115
1,	788	1,	1,123
2,	446	2,	356
3,	68	3,	117
4,	8	4,	18
5,	3	5,	8

OBSERVATIONS MADE IN UPFOLLOW OF FORMER DISPENSARY PATIENTS.

		Jan. 1 to July 1, 1915.	July 1, 1915, to Jan. 1, 1916.
Observance of dispensary rules,	Good,	1,289	1,662
	Fair,	1,435	1,750
	Poor,	657	730
	No data,	639	505
Sleeping in tent,		13	11
Sleeping on porch,		13	45
Smyptoms at time of visit,	Fever,	346	382
	Night sweats,	215	248
	Hemorrhage,	37	43
	Appetitie poor,	249	148
Habits,	Alcohol,	385	446
	Tobacco,	661	815
	Drugs,	2	3

PATIENTS DISCHARGED FROM THE TUBERCULOSIS DISPENSARIES OF THE PENNSYLVANIA DEPARTMENT OF HEALTH EACH YEAR SINCE THE ORGANIZATION OF THE DIVISION FOR THE CONTROL OF TUBERCULOSIS AND THE NUMBER OF UPFOLLOW VISITS IN 1914 AND 1915 ON THE EX-PATIENTS OF EACH GROUP.

Reasons for Discharge.	Total Discharged.	Total Visits.	1907.		1908.		1909.		1910.	
			Discharged.	Visits.	Discharged.	Visits.	Discharged.	Visits.	Dis. charged.	Visits.
Disease "Arrested" or "Cured,"	6,081	2,925			106		602		897	10
Transferred to State sanatoria,	18,180				20		1,647		2,002	
Removal,*	16,215	4,807	47		2,017	56	2,873	343	3,913	723
Non-attendance,	22,217	7,925			75		1,652	3	4,706	17
Non-compliance,	1,331	648							203	7
Referred to private physicians,	2,488	1,043			26		449	1	489	4
Located in outside institutions,		518								1
Died,	8,004		18		486		1,066		1,249	
Grand and annual totals,	74,516	17,866	65		2,730	56	8,289	347	13,459	762

*Located at new addresses or reported through friends.

PATIENTS DISCHARGED FROM THE TUBERCULOSIS DISPENSARIES OF THE PENNSYLVANIA DEPARTMENT OF HEALTH EACH YEAR SINCE THE ORGANIZATION OF THE DIVISION FOR THE CONTROL OF TUBERCULOSIS AND THE NUMBER OF UPFOLLOW VISITS IN 1914 AND 1915 ON THE EX-PATIENTS OF EACH GROUP—Continued.

Reasons for Discharge.	1911.		1912.		1913.		1914.		1915.	
	Discharged.	Visits.	Discharged.	Visits.	Discharged.	Visits.	Discharged.	Visits.	Discharged.	Visits.
Disease "Arrested" or "Cured,"	715	33	792	488	917	1,192	817	1,198	1,235	4
Transferred to State sanatoria,	2,130		2,286		2,993		3,298		3,804	
Removal,*	1,436	983	1,520	926	1,411	753	1,389	921	1,609	102
Non-attendance,	3,121	129	2,913	1,128	3,074	3,059	3,438	3,510	3,238	79
Non-compliance,	187	40	169	97	219	210	304	268	249	26
Referred to private physicians,	374	48	294	314	310	380	241	270	305	26
Located in outside institutions,		38		110		121		185		63
Died,	1,010		925		989		1,036		1,225	
Grand and annual totals,	8,973	1,271	8,899	3,063	9,913	5,715	10,523	6,352	11,665	300

*Located at new addresses or reported through friends.

Occupation and Income of Dispensary ex-Patients Before Admission and as Up-followed January 1 to July 1, 1915 (Grouped According to Reasons for Discharge or Susequent Finding, and by Admission Classification).

REMOVED.

		Before Admission.	After Discharge.
Incipient:			
Males, total,	104		
Under occupational age,	42		
No data,		0	28
No occupation,		11	9
Occupied,		51	25
Agricultural and transportation group,		13	6
Average weekly income of those employed,		$13 52	$11 90
Females, total,	138		
Under occupational age,	38		
No data,		0	39
No occupation,		14	9
Occupied,		86	52
Housewives,		51	34
Average weekly income of those employed (housewives not included),		$6 06	$6 00
Moderately Advanced:			
Males, total,	106		
Under occupational age,	7		
No data,		0	52
No occupation,		4	21
Occupied,		95	26
Agricultural and transportation group,		17	5
Average weekly income of those employed,		$12 21	$10 54
Females, total,	101		
Under occupational age,	9		
No data,		0	32
No occupation,		11	12
Occupied,		81	48
Housewives,		41	20
Average weekly income of those employed (housewives not included),		$7 00	$5 86
Far Advanced:			
Males, total,	35		
Under occupational age,	0		
No data,		0	17
No occupation,		2	12
Occupied,		33	6
Agricultural and transportation group,		7	4
Average weekly income of those employed,		$11 43	$6 33
Females, total,	22		
Under occupational age,	0		
No data,		0	8
No occupation,		1	4
Occupied,		21	10
Housewives,		12	4
Average weekly income of those employed (housewives not included),		$6 22	$4 80
Glands:			
Male,	1	} Under occupational age.	
Female,	1	}	

NON-ATTENDANCE.

		Before Admission.	After Discharge.
Incipient:			
Males, total,	525		
Under occupational age,	191		
No data,		0	78
No occupation,		60	40
Occupied,		274	216
Agricultural and transportation group,		69	56
Average weekly income of those employed,		$11 90	$9 76
Females total,	730		
Under occupational age,	232		
No data,		0	70
No occupation,		118	78
Occupied,		380	350
Housewives,		251	199
Average weekly income of those employed (housewives not included),		$6 01	$5 74
Moderately Advanced:			
Males, total,	446		
Under occupational age,	53		
No data,		0	95
No occupation,		46	66
Occupied,		347	232
Agricultural and transportation group,		73	52
Average weekly income of those employed,		$11 41	$10 65
Females, total,	487		
Under occupational age,	57		
No data,		0	67
No occupation,		59	56
Occupied,		371	307
Housewives,		246	204
Average weekly income of those employed (housewives not included),		$6 60	$5 40
Far Advanced:			
Males, total,	67		
Under occupational age,	4		
No data,		0	16
No occupation,		5	19
Occupied,		58	90
Agricultural and transportation group,		13	6
Average weekly income of those employed,		$11 44	$11 40
Females, total,	67		
Under occupational age,	2		
No data,		0	14
No occupation,		3	8
Occupied,		62	43
Housewives,		42	33
Average weekly income of those employed (housewives not included),		$6 75	$7 00

Glands:

2 male under occupational age.

Lupus:

1 female occupied before and after discharge.

Average weekly income, ... $6 00

FOUND IN SANATORIA OUTSIDE THE DEPARTMENT.

Incipient:		Before Admission.	After Discharge.
Males, total,	10		
Under occupational age,	5		
No data,		0	5
No occupation,		0	0
Occupied,		5	0
Agricultural and transportation group,		1	0
Average weekly income of those employed,		$12 75	$0 00
Females, total,	8		
Under occupational age,	6		
No data,		0	1
No occupation,		0	0
Occupied,		2	0
Housewives,		1	1
Average weekly income of those employed (housewives not included),		$4 00	$0 00
Moderately Advanced:			
Males, total,	18		
Under occupational age,	1		
No data,		0	8
No occupation,		3	5
Occupied,		14	4
Agricultural and transportation group,		3	1
Average weekly income of those employed,		$11 07	$11 25
Females, total,	16		
Under occupational age,	2		
No data,		0	3
No occupation,		0	9
Occupied,		14	2
Housewives,		4	1
Average weekly income of those employed (housewives not included),		$6 00	$5 00
Far Advanced:			
Males, total,	16		
Under occupational age,	0		
No data,		0	6
No occupation,		3	10
Occupied,		13	0
Agricultural and transportation group,		4	0
Average weekly income of those employed,		$9 80	$0 00
Females, total,	9		
Under occupational age,	1		
No data,		0	1
No occupation,		1	6
Occupied,		7	1
Housewives,		5	1
Average weekly income of those employed (housewives not included),		$3 50	$0 00

REFERRED TO FAMILY PHYSICIAN.

Incipient:			
Males, total,	36		
Under occupational age,	18		
No data,		0	6
No occupation,		2	3
Occupied,		16	9
Agricultural and transportation group,		7	4
Average weekly income of those employed,		$15 54	$15 71

		Before Admission.	After Discharge.
Females, total,	45		
Under occupational age,	13		
No data,		0	2
No occupation,		7	5
Occupied,		25	25
Housewives,		18	20
Average weekly income of those employed (housewives not included),		$6 71	$8 20

Moderately Advanced:

Males, total,	25		
Under occupational age,	3		
No data,		0	1
No occupation,		5	7
Occupied,		17	14
Agricultural and transportation group,		5	7
Average weekly income of those employed,		$15 38	$12 33
Females, total,	50		
Under occupational age,	8		
No data,		0	5
No occupation,		6	6
Occupied,		36	31
Housewives,		28	26
Average weekly income of those employed (housewives not included),		$7 00	$8 00

Far Advanced:

Males, total,	7		
Under occupational age,	0		
No data,		0	1
No occupation,		0	4
Occupied,		7	2
Agricultural and transportation group,		0	1
Average weekly income of those employed,		$13 33	$14 50
Females, total,	11		
Under occupational age,	0		
No data,		0	1
No occupation,		0	2
Occupied,		11	8
Housewives,		8	6
Average weekly income of those employed (housewives not included),		$9 00	$5 00

EXPELLED.

Incipient:

Males, total,	38		
Under occupational age,	10		
No data,		0	4
No occupation,		2	8
Occupied,		26	16
Agricultural and transportation group,		7	5
Average weekly income of those employed,		$9 64	$12 06
Females, total,	55		
Under occupational age,	17		
No data,		0	7
No occupation,		4	4
Occupied,		34	27
Housewives,		17	17
Average weekly income of those employed (housewives not included),		$5 37	$6 67

		Before Admission.	After Discharge.
Moderately Advanced:			
Males, total,	66		
Under occupational age,	11		
No data,		0	7
No occupation,		8	14
Occupied,		47	34
Agricultural and transportation group,		9	4
Average weekly income of those employed,		$10 71	$9 82
Females, total,	43		
Under occupational age,	9		
No data,		0	4
No occupation,		5	5
Occupied,		29	25
Housewives,		19	15
Average weekly income of those employed (housewives not included),		$4 33	$5 67
Far Advanced:			
Males, total,	19		
Under occupational age,	1		
No data,		0	7
No occupation,		0	6
Occupied,		18	5
Agricultural and transportation group,		1	1
Average weekly income of those employed,		$12 57	$11 20
Females, total,	14		
Under occupational age,	1		
No data,		0	4
No occupation,		2	4
Occupied,		11	15
Housewives,		9	4
Average weekly income of those employed (housewives not included),		$7 00	$4 00

DISEASE ARRESTED OR APPARENTLY ARRESTED.

Incipient:			
Males, total,	158		
Under occupational age,	73		
No data,		0	13
No occupation,		32	19
Occupied,		53	53
Agricultural and transportation group,		10	14
Average weekly income of those employed,		$9 90	$10 29
Females, total,	268		
Under occupational age,	106		
No data,		0	12
No occupation,		53	28
Occupied,		109	122
Housewives,		75	64
Average weekly income of those employed (housewives not included),		$4 87	$4 75
Moderately Advanced:			
Males, total,	78		
Under occupational age,	28		
No data,		0	3
No occupation,		6	8
Occupied,		44	39
Agricultural and transportation group,		17	18
Average weekly income of those employed,		$12 03	$11 02

		Before Admission.	After Discharge.
Females, total,	131		
Under occupational age,	35		
No data,		0	11
No occupation,		13	8
Occupied,		83	77
Housewives,		66	57
Average weekly income of those employed (housewives not included),		$4 18	$5 10

Far Advanced:

Males, total,	7		
Under occupational age,	1		
No data,		0	0
No occupation,		1	1
Occupied,		5	5
Agricultural and transportation group,		2	4
Average weekly income of those employed,		$8 20	$6 60
Females, total,	14		
Under occupational age,	2		
No data,		0	0
No occupation,		2	4
Occupied,		10	8
Housewives,		5	5
Average weekly income of those employed (housewives not included),		$6 00	$5 00

APPARENTLY CURED.

Incipient:

Males, total,	9		
Under occupational age,	3		
No data,		0	0
No occupation,		3	0
Occupied,		3	6
Agricultural and transportation group,		0	0
Average weekly income of those employed,		$9 00	$6 00
Females, total,	18		
Under occupational age,	8		
No data,		0	0
No occupation,		3	3
Occupied,		7	7
Housewives,		2	2
Average weekly income of those employed (housewives not included),		$5 80	$5 00

Moderately Advanced:

Males, total,	5		
Under occupational age,	3		
No data,		0	0
No occupation,		1	0
Occupied,		1	2
Agricultural and transportation group,		0	0
Average weekly income of those employed,		$8 00	$5 50
Females, total,	7		
Under occupational age,	2		
No data,		0	0
No occupation,		0	0
Occupied,		5	5
Housewives,		5	4
Average weekly income of those employed (housewives not included),		$0 00	$7 00

CURED.

		Before Admission.	After Discharge.
Incipient:			
Males, total,	2		
Under occupational age,	1		
No occupation,		1	1
Females, total,	4		
Under occupational age,	0		
No data,		0	2
No occupation,		2	1
Occupied,		2	1
Housewives,		2	0
Average weekly income of those employed,		$0 00	$6 00
Moderately Advanced:			
Male, total,	1		
No occupation before admission or after discharge.			
Females, total,	1		
Occupied before admission and after discharge.			
Average weekly income of those employed,		$0 00	$4 00

Occupation and Income of Dispensary ex-Patients Before Admission and as Up-followed July 1, 1915, to January 1, 1916 (Grouped According to Reasons for Discharge or Subsequent Finding, and by Admission Classification).

REMOVED.

		Before Admission.	After Discharge.
Incipient:			
Males, total,	91		
Under occupational age,	39		
No data,		0	13
No occupation,		10	10
Occupied,		42	29
Agricultural and transportation group,		7	3
Average weekly income of those employed,		$12 65	$11 54
Females, total,	123		
Under occupational age,	29		
No data,		0	19
No occupation,		18	12
Occupied,		76	63
Housewives,		42	32
Average weekly income of those employed (housewives not included),		$6 31	$7 56
Moderately Advanced:			
Males, total,	97		
Under occupational age,	7		
No data,		0	32
No occupation,		4	14
Occupied,		86	44
Agricultural and transportation group,		13	11
Average weekly income of those employed,		$11 01	$11 15
Females, total,	113		
Under occupational age,	10		
No data,		0	22
No occupation,		14	13
Occupied,		89	68
Housewives,		59	39
Average weekly income of those employed (housewives not included),		$8 26	$7 00

		Before Admission.	After Discharge.
Far Advanced:			
Males, total,	32		
Under occupational age,	2		
No data,		0	8
No occupation,		2	13
Occupied,		28	9
Agricultural and transportation group,		2	3
Average weekly income of those employed,		$12 26	$10 00
Females, total,	14		
Under occupational age,	0		
No data,		0	4
No occupation,		3	2
Occupied,		11	8
Housewives,		6	5
Average weekly income of those employed (housewives not included),		$17 50	$0 00
Glands:			
1 male under occupational age.			
3 females { under occupational age, 2. 1 unoccupied before admission and occupied after, with weekly income of,			$5 00
NON-ATTENDANCE.			
Incipient:			
Males, total.	622		
Under occupational age.	229		
No data,		0	52
No occupation,		90	54
Occupied,		303	287
Agricultural and transportation group.		77	61
Average weekly income of those employed.		$5 43	$10 69
Females. total.	852		
Under occupational age,	243		
No data,		0	53
No occupation.		147	101
Occupied.		462	455
Housewives.		302	275
Average weekly income of those employed (housewives not included),		$5 51	$5 73
Moderately Advanced:			
Males. total,	481		
Under occupational age.	78		
No data.		0	48
No occupation,		41	62
Occupied.		362	293
Agricultural and transportation group.		63	62
Average weekly income of those employed.		$11 52	$11 45
Females, total.	575		
Under occupational age,	69		
No data.		0	65
No occupation,		64	59
Occupied,		442	382
Housewives,		307	263
Average weekly income of those employed (housewives not included),		$5 94	$5 50
Far Advanced:			
Males, total,	61		
Under occupational age,	5		
No data,		0	18
No occupation,		2	11
Occupied,		54	27
Agricultural and transportation group,		11	4
Average weekly income of those employed.		$10 10	$9 50

		Before Admission.	After Discharge.
Females, total,	57		
Under occupational age,	4		
No data,		0	10
No occupation,		4	8
Occupied,		49	35
Housewives,		33	26
Average weekly income of those employed (housewives not included),		$5 40	$5 12

Bone:
1 male under occupational age.

Glands:
5 males } under occupational age.
8 females }

Lupus:
1 female ocupied before, with income of $4.00; occupied as housewife at present.

FOUND IN SANATORIA OUTSIDE THE DEPARTMENT.

		Before Admission.	After Discharge.
Incipient:			
Males, total,	9		
Under occupational age,	3		
No data,		0	2
No occupation,		0	3
Occupied,		6	1
Agricultural and transportation group,		1	0
Average weekly income of those employed,		$11 20	Not stated
Females, total,	5		
Under occupational age,	3		
No data,		0	0
No occupation,		1	1
Occupied,		1	1
Housewives,		1	1
Average weekly income of those employed (housewives not included),		$0 00	$0 00
Moderately Advanced:			
Males, total,	28		
Under occupational age,	6		
No data,		0	5
No occupation,		5	7
Occupied,		17	10
Agricultural and transportation group,		3	1
Average weekly income of those employed,		$10 46	$9 70
Females, total,	30		
Under occupational age,	3		
No data,		0	3
No occupation,		2	4
Occupied,		15	10
Housewives,		10	7
Average weekly income of those employed (housewives not included),		$6 20	$6 67
Far Advanced:			
Males, total,	6		
Under occupational age,	0		
No data,		0	4
No occupation,		0	2
Occupied,		6	0
Agricultural and transportation group,		1	0
Average weekly income of those employed,		$10 00	$0 00

		Before Admission.	After Discharge.
Females, total,	10		
Under occupational age,	2		
No data,		0	2
No occupation,		1	4
Occupied,		7	2
Housewives,		3	0
Average weekly income of those employed (housewives not included),		$6 00	$3 00

REFERRED TO FAMILY PHYSICIAN.

Incipient:

Males, total,	39		
Under occupational age,	18		
No data,		0	1
No occupation,		2	4
Occupied,		19	16
Agricultural and transportation group,		6	4
Average weekly income of those employed,		$11 80	$15 40
Females, total,	53		
Under occupational age,	12		
No data,		0	3
No occupation,		9	9
Occupied,		32	29
Housewives,		22	22
Average weekly income of those employed (housewives not included),		$7 11	$5 71

Moderately Advanced:

Males, total,	34		
Under occupational age,	3		
No data,		0	4
No occupation,		3	4
Occupied,		28	23
Agricultural and transportation group,		7	9
Average weekly income of those employed,		$13 04	$12 25
Females, total,	54		
Under occupational age,	8		
No data,		0	0
No occupation,		5	8
Occupied,		41	38
Housewives,		27	27
Average weekly income of those employed (housewives not included),		$6 12	$7 22

Far Advanced:

Males, total,	7		
Under occupational age,	1		
No data,		0	1
No occupation,		0	2
Occupied,		6	3
Agricultural and transportation group,		0	0
Average weekly income of those employed,		$12 40	$11 66
Females, total,	10		
Under occupational age,	0		
No data,		0	1
No occupation,		1	0
Occupied,		9	7
Housewives,		7	7
Average weekly income of those employed (housewives not included),		$6 00	$7 00

Glands:

1 female occupied before admission and after discharge with income of			$18 00

EXPELLED.

		Before Admission.	After Discharge.
Incipient:			
Males, total,	37		
Under occupational age,	10		
No data,		0	5
No occupation,		1	3
Occupied,		26	19
Agricultural and transportation group,		2	2
Average weekly income of those employed,		$9 10	$9 35
Females, total,	49		
Under occupational age,	13		
No data,		0	5
No occupation,		5	8
Occupied,		31	23
Housewives,		20	13
Average weekly income of those employed (housewives not included),		$7 00	$6 75
Moderately Advanced:			
Males, total,	53		
Under occupational age,	9		
No data,		0	7
No occupation,		5	7
Occupied,		39	30
Agricultural and transportation group,		9	4
Average weekly income of those employed,		$11 80	$9 25
Females, total,	34		
Under occupational age,	0		
No data,		0	4
No occupation,		3	3
Occupied,		31	27
Housewives,		17	14
Average weekly income of those employed (housewives not included),		$3 92	$4 72
Far Advanced:			
Males, total,	9		
Under occupational age,	0		
No data,		0	3
No occupation,		2	4
Occupied,		7	2
Agricultural and transportation group,		0	0
Average weekly income of those employed,		$10 33	$14 50
Females, total,	5		
Under occupational age,	0		
No data,		0	2
No occupation,		1	0
Occupied,		4	3
Housewives,		4	2
Average weekly income of those employed (housewives not included),		$0 00	$4 00

DISEASE ARRESTED OR APPARENTLY ARRESTED.

Incipient:			
Males, total,	227		
Under occupational age,	107		
No data,		0	4
No occupation,		54	31
Occupied,		66	85
Agricultural and transportation group,		13	20
Average weekly income of those employed,		$10 30	$9 55

		Before Admission.	After Discharge.
Females, total,	395		
Under occupational age,	161		
No data,		0	4
No occupation,		75	44
Occupied,		159	186
Housewives,		110	96
Average weekly income of those employed (housewives not included),		$5 00	$5 16
Moderately Advanced:			
Males, total,	106		
Under occupational age,	36		
No data,		0	0
No occupation,		14	8
Occupied,		56	62
Agricultural and transportation group,		13	14
Average weekly income of those employed,		$10 70	$10 36
Females, total,	215		
Under occupational age,	58		
No data,		0	6
No occupation,		19	16
Occupied,		138	135
Housewives,		108	95
Average weekly income of those employed (housewives not included),		$6 20	$6 14
Far Advanced:			
Males, total,	4		
Under occupational age,	1		
No data,		0	0
No occupation,		0	0
Occupied,		3	3
Agricultural and transportation group,		1	1
Average weekly income of those employed,		$13 00	$11 33
Females, total,	12		
Under occupational age,	3		
No data,		0	0
No occupation,		1	1
Occupied,		8	8
Housewives,		5	5
Average weekly income of those employed (housewives not included),		$4 33	$3 70

Glands:
1 male under occupational age.

APPARENTLY CURED.

Males, total,	13		
Under occupational age,	6		
No data,		0	1
No occupation,		4	1
Occupied,		3	5
Agricultural and transportation group,		0	0
Average weekly income of those employed,		$10 33	$7 60
Females, total,	28		
Under occupational age,	10		
No data,		0	0
No occupation,		6	5
Occupied,		12	13
Housewives,		7	6
Average weekly income of those employed (housewives not included),		$5 60	$5 71
Moderately Advaanced:			
Males, total,	7		
Under occupational age,	4		
No data,		0	0
No occupation,		1	1
Occupied,		2	2
Agricultural and transportation group,		1	1
Average weekly income of those employed,		$9 00	$8 00

		Before Admission.	After Discharge.
Females, total,	15		
Under occupational age,	6		
No data,		0	0
No occupation,		2	0
Occupied,		7	9
Housewives,		6	4
Average weekly income of those employed (housewives not included),		$6 00	$4 60

Far Advanced:
1 female occupied before and after as housewife.

CURED.

Incipient:

Males, total,	2		
Under occupational age,	0		
No data,		0	0
No occupation,		0	0
Occupied,		2	2
Agricultural and transportation group,		1	1
Average weekly income of those employed,		$10 50	$14 00
Females, total,	5		
Under occupational age,	3		
No data,		0	0
No occupation,		1	1
Occupied,		1	1
Housewives,		0	0
Average weekly income of those employed (housewives not included),		$5 00	$5 00

DEATHS OTHER THAN TUBERCULOSIS AMONG DISPENSARY EX-PATIENTS BEFORE JULY 1ST, 1915.

Total,	20	
Accidents,	2	1 unknown. 1 killed by automobile.
Typhoid fever,	1	
Diabetes,	2	
Pneumonia,	3	
Operations,	2	1 unknown. 1 hysterectomy.
Bright's disease,	2	
Dropsy,	1	
Heart disease,	2	1 unknown. 1 mitral regurgitation.
Convulsion,	1	
Tumor on the brain,	1	
Murdered,	1	
Puerperal peritonitis,	1	
Nephritis,	1	

July 1, 1915, to January 1, 1916.

Total,	19	
Suicide,	2	1 by shooting self. 1 unknown.
Childbirth,	2	
Pneumonia,	2	
Accident,	3	1 drowned. 1 internal injury. 1 fell from trestling.
Uremia,	1	
Bright's disease,	2	
Diphtheria,	1	
Apoplexy,	1	
Heart disease,	1	
Miner's asthma,	1	
Cancer of stomach,	2	
Dropsy,	1	

ADDITIONAL UPFOLLOW NOTES ON FORMER DISPENSARY PATIENTS.

Cases Who Refused Sanatoria Treatment.

Total,	20		
Incipient,	4	Improved,	3
		Unimproved,	1
Moderately advanced,	10	Improved,	8
		Unimproved,	2
For advanced,	6	Arrested,	1
		Improved,	1
		Unimproved,	4

Cases Removed to Other Dispensaries.

Total,	50		
Incipient,	18	Arrested,	1
		Improved,	13
		Unimproved,	4
Moderately advanced,	19	Improved.	11
		Unimproved,	8
Far advanced,	12	Improved,	5
		Unimproved,	7
Glands,	1	Improved,	1

Cases Removed to Other Countries.

Total,	104
Incipient,	25
Moderately advanced,	53
Far advanced,	26

Countries to Which Removed.

Ireland,	4
England,	5
Wales,	1
Scotland,	3
Canada,	2
Poland,	2
Greece,	3
Servia,	1
Russia,	11
Italy,	38
France,	1
Austria,	19
Germany,	2
Not stated,	12

Cases Moved From One Part of Pennsylvania to Another.

Total,	113
Incipient,	47
Moderately advanced,	50
Far advanced,	13
No data,	3

Cases Moved Out of Pennsylvania.

Total,	192
Incipient,	81
Moderately advanced,	81
Far advanced,	23
No data,	7

States to Which Removed.

New York,	44
Ohio,	25
New Jersey,	22
Virginia,	21
Maryland,	18
California,	8
Michigan,	6
Colorado,	5
West Virginia,	5
Delaware,	11
Illinois,	3
Washington, D. C.,	2
Arizona,	2
Texas,	2
Iowa,	2
North Carolina,	2
Nebraska,	2
Rhode Island,	1
Connecticut,	1
Oregon.	1
New Mexico,	1
Indiana,	1
Kansas,	1
Missouri,	1
No data,	5

UPFOLLOW REPORT OF 974 PATIENTS PREVIOUSLY DISCHARGED FROM MONT ALTO SANATORIUM.

UPFOLLOW JANUARY 1 TO JULY 1, 1915.

Admitted as	Discharged as	Upfollowed as	Interval between Discharge and Last Upfollow.							
			Less than 6 Mos.	6-12 Mos.	12-18 Mos.	18-24 Mos.	24-30 Mos.	30-36 Mos.	36-42 Mos.	Over 42 Mos.	No data.
Incipient, 240=24.6%	Cured, 0=0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Apparently Cured, 90=37.5%	Improved, 65	0	28	15	15	6	1	0	0	0
		Stationary, 18	0	7	6	1	3	0	1	0	0
		Progressive, 6	0	4	0	1	0	0	1	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 1	0	1	0	0	0	0	0	0	0
	Arrested, 99=41.2%	Improved, 67	0	19	17	18	11	2	0	0	0
		Stationary, 23	0	12	7	4	0	0	0	0	0
		Progressive, 8	0	2	4	2	0	0	0	0	0
		Died, tuberculosis, 1	0	0	1	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Apparently Arrested, 7=2.9%	Improved, 6	0	2	4	0	0	0	0	0	0
		Stationary, 1	0	0	0	0	1	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Improved, 39=16.2%	Improved, 30	0	5	3	9	8	2	2	1	0
		Stationary, 4	0	1	0	1	2	0	0	0	0
		Progressive, 4	0	2	1	1	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 1	0	1	0	0	0	0	0	0	0

UPFOLLOW REPORT OF 974 PATIENTS PREVIOUSLY DISCHARGED FROM MONT ALTO SANATORIUM.

UPFOLLOW JANUARY 1 TO JULY 1, 1915—Continued.

Admitted as	Discharged as	Upfollowed as	Interval between Discharge and Last Upfollow.							
			Less than 6 Mos.	6-12 Mos.	12-18 Mos.	18-24 Mos.	24-30 Mos.	30-36 Mos.	36-42 Mos.	Over 42 Mos.	No data.
Moderately Advanced, .. 466=47.8%	Unimproved, ---------- 5=2.1%	Improved, ---------- 3	0	0	2	0	1	0	0	0	0
		Stationary, ---------- 0	0	0	0	0	0	0	0	0	0
		Progressive, ---------- 2	0	1	1	0	0	0	0	0	0
		Died, tuberculosis, ---- 0	0	0	0	0	0	0	0	0	0
		Died, other, ---------- 0	0	0	0	0	0	0	0	0	0
		No data, ---------- 0	0	0	0	0	0	0	0	0	0
	Cured, ---------- 0= 0.0%	Improved, ---------- 0	0	0	0	0	0	0	0	0	0
		Stationary, ---------- 0	0	0	0	0	0	0	0	0	0
		Progressive, ---------- 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, ---- 0	0	0	0	0	0	0	0	0	0
		Died, other, ---------- 0	0	0	0	0	0	0	0	0	0
		No data, ---------- 0	0	0	0	0	0	0	0	0	0
	Apparently Cured, ----- 46= 9.9%	Improved, ---------- 25	0	9	6	6	3	1	0	0	0
		Stationary, ---------- 14	0	7	4	1	1	0	1	0	0
		Progressive, ---------- 6	0	3	0	1	2	0	0	0	0
		Died, tuberculosis, ---- 0	0	0	0	0	0	0	0	0	0
		Died, other, ---------- 0	0	0	0	0	0	0	0	0	0
		No data, ---------- 1	0	1	0	0	0	0	0	0	0
	Arrested, ---------- 218=46.7%	Improved, ---------- 123	0	44	25	31	19	2	0	2	0
		Stationary, ---------- 59	0	25	12	9	11	1	0	1	0
		Progressive, ---------- 25	0	6	10	5	3	0	0	1	0
		Died, tuberculosis, ---- 8	1	2	2	2	0	0	1	0	0
		Died, other, ---------- 0	0	0	0	0	0	0	0	0	0
		No data, ---------- 3	0	3	0	0	0	0	0	0	0
	Apparently Arrested, -- 8= 1.7%	Improved, ---------- 4	0	2	2	0	0	0	0	0	0
		Stationary, ---------- 2	0	2	0	0	0	0	0	0	0
		Progressive, ---------- 1	0	0	1	0	0	0	0	0	0
		Died, tuberculosis, ---- 1	0	1	0	0	0	0	0	0	0
		Died, other, ---------- 0	0	0	0	0	0	0	0	0	0
		No data, ---------- 0	0	0	0	0	0	0	0	0	0

Far Advanced, 268=27.5%	Improved, 162=34.8%	Improved,	74	0	19	15	23	12	2	0	3	0
		Stationary,	33	0	13	10	6	3	0	0	1	0
		Progressive,	27	0	6	3	10	5	1	2	0	0
		Died, tuberculosis,	23	3	4	7	5	2	1	1	0	0
		Died, other,	1	0	0	0	1	0	0	0	0	0
		No data,	4	0	0	2	1	1	0	0	0	0
	Unimproved, 32= 6.9%	Improved,	8	0	3	3	1	0	1	0	0	0
		Stationary,	5	0	3	0	1	0	1	0	0	0
		Progressive,	6	0	3	1	1	1	0	0	0	0
		Died, tuberculosis,	12	5	2	4	1	0	0	0	0	0
		Died, other,	0	0	0	0	0	0	0	0	0	0
		No data,	1	0	0	0	0	1	0	0	0	0
	Cured, 0= 0.0%	Improved,	0	0	0	0	0	0	0	0	0	0
		Stationary,	0	0	0	0	0	0	0	0	0	0
		Progressive,	0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis,	0	0	0	0	0	0	0	0	0	0
		Died, other,	0	0	0	0	0	0	0	0	0	0
		No data,	0	0	0	0	0	0	0	0	0	0
	Apparently Cured, 7= 2.6%	Improved,	4	0	3	0	0	0	1	0	0	0
		Stationary,	1	0	0	1	0	0	0	0	0	0
		Progressive,	0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis,	2	1	0	0	1	0	0	0	0	0
		Died, other,	0	0	0	0	0	0	0	0	0	0
		No data,	0	0	0	0	0	0	0	0	0	0
	Arrested, 65=24.3%	Improved,	22	0	6	6	3	5	2	0	0	0
		Stationary,	21	0	9	4	2	3	0	1	2	0
		Progressive,	11	0	5	3	0	1	0	1	1	0
		Died, tuberculosis,	9	2	5	2	0	0	0	0	0	0
		Died, other,	1	1	0	0	0	0	0	0	0	0
		No data,	1	0	0	1	0	0	0	0	0	0
	Apparently Arrested, 1= 0.4%	Improved,	0	0	0	0	0	0	0	0	0	0
		Stationary,	0	0	0	0	0	0	0	0	0	0
		Progressive,	1	0	1	0	0	0	0	0	0	0
		Died, tuberculosis,	0	0	0	0	0	0	0	0	0	0
		Died, other,	0	0	0	0	0	0	0	0	0	0
		No data,	0	0	0	0	0	0	0	0	0	0
	Improved, 110=41.0%	Improved,	34	0	12	4	9	6	3	0	0	0
		Stationary,	21	0	12	3	5	1	0	0	0	0
		Progressive,	30	0	8	12	3	3	4	0	0	0
		Died, tuberculosis,	23	6	8	7	1	1	0	0	0	0
		Died, other,	0	0	0	0	0	0	0	0	0	0
		No data,	2	0	2	0	0	0	0	0	0	0

UPFOLLOW REPORT OF 974 PATIENTS PREVIOUSLY DISCHARGED FROM MONT ALTO SANATORIUM.

UPFOLLOW JANUARY 1 TO JULY 1, 1915—Continued.

Admitted as	Discharged as	Upfollowed as	Interval between Discharge and Last Upfollow.							
			Less than 6 Mos.	6-12 Mos.	12-18 Mos.	18-24 Mos.	24-30 Mos.	30-36 Mos.	36-42 Mos.	Over 42 Mos.	No data.
	Unimproved, ---------- 85=31.7%	Improved, ---------- 6	0	3	2	1	0	0	0	0	0
		Stationary, ---------- 7	0	3	2	0	0	0	0	1	0
		Progressive, ---------- 13	0	8	1	1	2	0	0	0	0
		Died, tuberculosis, ----- 58	28	17	3	7	0	0	0	0	0
		Died, other, ---------- 0	0	0	0	0	0	0	0	0	0
		No data, ---------- 1	0	1	0	0	0	0	0	0	0

Average Age.

Incipient, ----------	M.,	15.1 years
	F.,	20.1 years
Moderately Advanced, -----	M.,	31.2 years
	F.,	26.5 years
Far Advanced, ----------	M.,	33.8 years
	F.,	32.9 years

Average Hospital Attendance.

Incipient, ----------	M.,	212.5 days
	F.,	185.8 days
Moderately Advanced, -----	M.,	171.9 days
	F.,	169.7 days
Far Advanced, ----------	M.,	204.7 days
	F.,	203.7 days

	Total.	No Data.	Weight. Gain.	Loss.	Stationary.
Incipient, ----------	238	6	150	59	23
Moderately Advanced, ---------	421	21	211	145	44
Far Advanced, ----------	175	14	52	90	19

	Total.	No Data.	Sputum. Not Examined.	Positive.	Negative.
Incipient, ----------	238	3	162	7	66
Moderately Advanced, ---------	421	13	208	52	147
Far Advanced, ----------	175	7	74	55	39

UPFOLLOW JANUARY 1 TO JULY 1, 1915.

Admitted as	Discharged as	Upfollowed as
Incipient, .. 189= 79.7% *48= 20.3%*	Cured, ... 0= 0.0% *0= 0.0%*	Improved, ... 0 *0* Stationary, ... 0 *0* Progressive, ... 0 *0*
	Apparently Cured, .. 68= 35.9% *21= 43.8%*	Improved, ... 48 *17* Stationary, ... 14 *4* Progressive, ... 6 *0*
	Arrested, .. 81= 42.9% *17= 35.4%*	Improved, ... 55 *12* Stationary, ... 20 *3* Progressive, ... 6 *2*
	Apparently Arrested, 6= 3.2% *1= 2.1%*	Improved, ... 6 *0* Stationary, ... 0 *1* Progressive, ... 0 *0*
	Improved, . 33= 17.5% *5= 10.4%*	Improved, ... 26 *4* Stationary, ... 3 *1* Progressive, ... 4 *0*
	Unimproved, 1= 0.5% *4= 8.3%*	Improved, ... 0 *3* Stationary, ... 0 *0* Progressive, ... 1 *1*
Moderately Advanced, 321= 77.9% *91= 22.1%*	Cured, ... 0= 0.0% *0= 0.0%*	Improved, ... 0 *0* Stationary, ... 0 *0* Progressive, ... 0 *0*
	Apparently Cured, .. 30= 9.3% *15= 16.5%*	Improved, ... 17 *8* Stationary, ... 9 *5* Progressive, ... 4 *2*
	Arrested, .. 160= 49.8% *47= 51.6%*	Improved, ... 97 *26* Stationary, ... 42 *17* Progressive, ... 21 *4*

Admitted as		Discharged as		Upfollowed as	
Far Advanced,	158= 92.4% *13*= 7.6%	Apparently Arrested	4= 1.3% *3*= *3.3%*	Improved, ...	2 *2*
				Stationary, ...	2 *0*
				Progressive, ...	0 *1*
		Improved, .	110= 34.3% *24*= *26.4%*	Improved, ...	59 *15*
				Stationary, ...	27 *6*
				Progressive, ...	24 *3*
		Unimproved,	17= 5.3% *2*= *2.2%*	Improved, ...	7 *1*
				Stationary, ...	5 *0*
				Progressive, ...	5 *1*
		Cured, ...	0= 0.0% *0*= *0.0%*	Improved, ...	0 *0*
				Stationary, ...	0 *0*
				Progressive, ...	0 *0*
		Apparently Cured, ..	4= 2.5% *1*= *7.7%*	Improved, ...	4 *0*
				Stationary, ...	0 *1*
				Progressive, ...	0 *0*
		Arrested, ..	45= 28.5% *9*= *69.2%*	Improved, ...	18 *4*
				Stationary, ...	19 *2*
				Progressive, ...	8 *3*
		Apparently Arrested	1= 0.6% *0*= *0.0%*	Improved, ...	0 *0*
				Stationary, ...	0 *0*
				Progressive, ...	1 *0*
		Improved, .	82= 51.9% *3*= *23.1%*	Improved, ...	33 *1*
				Stationary, ...	21 *0*
				Progressive, ...	28 *2*
		Unimproved,	26= 16.5% *0*= *0.0%*	Improved, ...	6 *0*
				Stationary, ...	7 *0*
				Progressive.	13 *0*

Cases in *italic* treated with Tubercle Bacilli Products (Tuberculin).

INCIDENCE OF TUBERCULOSIS IN FAMILIES OF 974 FORMER PATIENTS OF THE STATE SANATORIUM AT MONT ALTO AS TRACED THE FIRST HALF OF 1915.

Number in Family Besides Patient.	Patients.													
	Total.	Classification According to Number of Tuberculous Adults in Family of Each.							Classification According to Number of Tuberculous Children in Family of Each.					
		No Data.	None.	1	2	3	4	5	No Data.	None.	1	2	3	4	5
Undetermined,	10	9	0	1	0	0	0	0	9	1	0	0	0	0	0
None,	10	0	10	0	0	0	0	0	0	10	0	0	0	0	0
1,	90	0	25	65	0	0	0	0	0	89	1	0	0	0	0
2,	99	0	16	72	11	0	0	0	0	91	8	0	0	0	0
3,	136	0	22	105	8	1	0	0	0	115	15	6	0	0	0
4,	159	0	30	106	21	2	0	0	0	116	21	17	5	0	0
5,	150	0	29	100	20	0	0	1	0	100	23	18	6	3	0
6,	91	0	13	63	9	6	0	0	0	66	12	9	4	0	0
7,	84	0	8	64	9	1	2	0	0	55	16	11	1	0	1
8,	69	0	13	36	16	4	0	0	0	35	12	10	5	7	0
9,	48	0	8	34	4	1	1	0	0	25	9	4	7	3	0
10,	14	0	3	7	3	0	0	1	0	8	2	1	2	0	1
11,	3	0	1	1	1	0	0	0	0	2	1	0	0	0	0
12,	2	0	0	2	0	0	0	0	0	1	0	1	0	0	0
13,	9	0	0	2	0	0	0	7	0	1	1	0	0	0	7
Summary,	974	9	178	658	102	15	3	9	9	715	121	77	30	13	9

ADDITIONAL UPFOLLOW NOTES ON EX-PATIENTS OF THIS SERIES.

Sleeping Quarters.

Total,	974
Separate room,	669
Separate bed,	106
Sleeping tent,	0
Sleeping porch,	1
No precautions,	164
No data,	34

Condition of House.

Total,	834
Clean,	480
Fair,	268
Poor,	50
No data,	36

Reason for Discharge.

Total,	974
Voluntary,	851
Dismissed,	12
Deserted,	2
Other sanatoria,	1
Pay roll,	58
Against advice,	48
By request,	2

Symptons.

Fever.	Night Sweats.	Hemorrhage.
164	96	13

UPFOLLOW REPORT OF DISCHARGED PATIENTS IN REGARD TO SUBSEQUENT DISPENSARY ATTENDANCE.

January 1 to July 1, 1915.

Dispensary.	Total.	No Attendance.	Attendance.		
			Total.	Regular.	Irregular.
Total,	841	227	614	293	321
Wilkes-Barre,	73	21	52	30	22
York,	8	3	5	0	5
Erie,	12	5	7	3	4
Carlisle,	0	0	0	0	0
Lebanon,	8	0	8	3	5
West Chester,	0	0	0	0	0
Bellefonte,	0	0	0	0	0
Emporium,	0	0	0	0	0
Johnstown,	1	1	0	0	0
Lewistown,	4	3	1	0	1
Chambersburg,	0	0	0	0	0
Chester,	17	7	10	5	5
Harrisburg,	45	10	35	25	10
Altoona,	5	0	5	1	4
Butler,	6	0	6	2	4
Berwick,	0	0	0	0	0
McConnellsburg,	0	0	0	0	0
Honesdale,	5	0	5	2	3
Milford,	0	0	0	0	0
Pittsburgh,	89	17	72	40	32
Philadelphia, 1630 Poplar Street,	161	74	87	10	77
Rochester,	0	0	0	0	0
Doylestown,	0	0	0	0	0
Kittanning,	5	2	3	2	1
New Bloomfield,	0	0	0	0	0
Mifflintown,	1	0	1	0	1
Coudersport,	0	0	0	0	0
Danville,	0	0	0	0	0
Mifflinburg,	0	0	0	0	0
Meyersdale,	0	0	0	0	0
Norristown,	4	1	3	1	2
Oil City,	0	0	0	0	0
Williamsport,	7	3	4	3	1
Tionesta,	0	0	0	0	0
New Castle,	1	1	0	0	0
Sharon,	2	1	1	0	1
Reading,	1	1	0	0	0
Bradford,	0	0	0	0	0

UPFOLLOW REPORT OF DISCHARGED PATIENTS IN REGARD TO SUBSEQUENT DISPENSARY ATTENDANCE—Continued.

Dispensary.	Total.	No Attendance.	Attendance.		
			Total.	Regular.	Irregular.
Lancaster,	5	0	5	3	2
Scranton,	38	13	25	15	10
Meadville,	1	0	1	0	1
Ridgway,	1	0	1	1	0
Clarion,	2	0	2	2	0
Towanda,	4	0	4	3	1
Mauch Chunk,	0	0	0	0	0
Lock Haven,	1	0	1	1	0
Huntingdon,	1	0	1	0	1
Indiana,	0	0	0	0	0
Montrose,	0	0	0	0	0
Selinsgrove,	0	0	0	0	0
Allentown,	12	4	8	5	3
Easton,	3	0	3	3	0
Shamokin,	7	4	3	1	2
Warren,	0	0	0	0	0
Monongahela,	1	0	1	1	0
Tunkhannock,	1	0	1	0	1
Greensburg,	7	1	6	3	3
Wellsboro,	1	0	1	0	1
Dushore,	1	0	1	0	1
Gettysburg,	0	0	0	0	0
Everett,	2	0	2	2	0
Clearfield,	2	0	2	2	0
Waynesburg,	0	0	0	0	0
Punxsutawney,	0	0	0	0	0
Stroudsburg,	0	0	0	0	0
Pottsville,	17	3	14	9	5
Uniontown,	0	0	0	0	0
Hazleton,	5	0	5	1	4
Hastings,	1	0	1	0	1
Connellsville,	0	0	0	0	0
Mt. Carmel,	8	0	8	4	4
Franklin,	2	0	2	1	1
Jenkintown,	0	0	0	0	0
Columbia,	0	0	0	0	0
Coatesville,	2	0	2	1	1
Phoenixville,	0	0	0	0	0
Mt. Pleasant,	0	0	0	0	0
Lykens,	0	0	0	0	0
Tyrone,	0	0	0	0	0
Philipsburg,	0	0	0	0	0
McKeesport,	0	0	0	0	0
Bristol,	3	0	3	0	3
Carbondale,	3	0	3	0	3
Shenandoah,	12	2	10	9	1
Hanover,	0	0	0	0	0
Bangor,	3	1	2	1	1
Monessen,	3	1	2	1	1
Lansford,	1	0	1	0	1
Titusville,	2	1	1	1	0
Tamaqua,	2	1	1	0	1
Milton,	0	0	0	0	0
Philadelphia, 1400 South 24th Street,	116	29	87	44	43
Pittston,	0	0	0	0	0
DuBois,	4	0	4	2	2
West Fairview,	0	0	0	0	0
Susquehanna,	0	0	0	0	0
South Betldehem,	2	1	1	1	0
Corry,	0	0	0	0	0
Homestead,	6	1	5	2	3
Braddock,	6	1	5	1	4
Brookville,	0	0	0	0	0
Beaver Falls,	0	0	0	0	0
Washington,	7	2	5	2	3
Pottstown,	0	0	0	0	0
Philadelphia, 1731 Orthodox Street,	54	6	48	20	28
Waynesboro,	0	0	0	0	0
Wilkinsburg,	13	3	10	8	2
Sunbury,	7	1	6	5	1
Tarentum,	0	0	0	0	0
Renovo,	0	0	0	0	0
Nanticoke,	7	1	6	3	3
Brownsville,	0	0	0	0	0
Kane,	10	1	9	8	1
Cresson,	0	0	0	0	0
Ardmore,	0	0	0	0	0

UPFOLLOW REPORT OF 1,294 PATIENTS PREVIOUSLY DISCHARGED FROM MONT ALTO SANATORIUM.

UPFOLLOW JULY 1, 1915, TO JANUARY 1, 1916.

Admitted as	Discharged as	Upfollowed as	Interval between Discharge and Lost Upfollow.								
			Less than 6 Mos.	6-12 Mos.	12-18 Mos.	18-24 Mos.	24-30 Mos.	30-36 Mos.	36-42 Mos.	Over 42 Mos.	No data.
Incipient, 336= 26.0%	Cured, 0= 0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Apparently Cured, 75= 22.3%	Improved, 60	0	31	8	4	14	2	0	1	0
		Stationary, 12	0	12	0	0	0	0	0	0	0
		Progressive, 3	0	2	0	1	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Arrested, 137= 40.8%	Improved, 92	0	21	20	19	16	2	10	4	0
		Stationary, 34	0	10	8	7	2	2	3	2	0
		Progressive, 11	0	5	2	0	2	1	1	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Apparently Arrested, 27= 8.0%	Improved, 21	0	1	14	6	0	0	0	0	0
		Stationary, 3	0	0	3	0	0	0	0	0	0
		Progressive, 3	0	0	2	0	1	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Improved, 89= 26.5%	Improved, 64	0	10	9	12	9	6	11	7	0
		Stationary, 19	0	7	2	0	8	5	1	1	0
		Progressive, 5	0	1	1	1	1	0	0	1	0
		Died, tuberculosis, 1	1	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0

	Unimproved, 8= 2.4%	Improved,	5	0	0	1	0	2	1	0	1	0
		Stationary,	1	0	0	0	0	1	0	0	0	0
		Progressive,	1	0	0	0	0	0	1	0	0	0
		Died, tuberculosis,	1	1	0	0	0	0	0	0	0	0
		Died, other,	0	0	0	0	0	0	0	0	0	0
		No data,	0	0	0	0	0	0	0	0	0	0
	Cured, 0= 0%	Improved,	0	0	0	0	0	0	0	0	0	0
		Stationary,	0	0	0	0	0	0	0	0	0	0
		Progressive,	0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis,	0	0	0	0	0	0	0	0	0	0
		Died, other,	0	0	0	0	0	0	0	0	0	0
		No data,	0	0	0	0	0	0	0	0	0	0
	Apparently Cured, 38= 5.9%	Improved,	24	0	7	7	6	2	2	0	0	0
		Stationary,	9	0	4	1	1	2	0	0	1	0
		Progressive,	5	0	2	1	0	1	0	1	0	0
		Died, tuberculosis,	0	0	0	0	0	0	0	0	0	0
		Died, other,	0	0	0	0	0	0	0	0	0	0
		No data,	0	0	0	0	0	0	0	0	0	0
	Arrested, 263= 40.6%	Improved,	150	0	35	37	21	38	8	7	4	0
		Stationary,	66	0	24	13	8	8	7	3	3	0
		Progressive,	35	0	14	6	7	1	4	0	3	0
		Died, tuberculosis,	9	2	1	1	3	2	0	0	0	0
		Died, other,	0	0	0	0	0	0	0	0	0	0
		No data,	3	0	2	0	0	1	0	0	0	0
Moderately Advanced, 647= 50.0%	Apparently Arrested, 17= 2.6%	Improved,	13	0	2	8	3	0	0	0	0	0
		Stationary,	2	0	1	1	0	0	0	0	0	0
		Progressive,	2	0	0	2	0	0	0	0	0	0
		Died, tuberculosis,	0	0	0	0	0	0	0	0	0	0
		Died, other,	0	0	0	0	0	0	0	0	0	0
		No data,	0	0	0	0	0	0	0	0	0	0
	Improved, 256= 39.6%	Improved,	119	0	34	11	15	29	9	13	8	0
		Stationary,	63	0	28	12	10	4	3	3	3	0
		Progressive,	41	0	15	6	4	10	3	1	2	0
		Died, tuberculosis,	18	3	2	3	2	2	1	3	2	0
		Died, other,	2	1	0	0	0	1	0	0	0	0
		No data,	13	0	5	5	1	1	0	1	0	0
	Unimproved, 73= 11.3%	Improved,	22	0	6	2	5	3	0	5	1	0
		Stationary,	17	0	8	2	3	2	1	0	1	0
		Progressive,	12	0	3	1	1	1	0	1	0	0
		Died, tuberculosis,	16	7	0	4	4	1	0	0	0	0
		Died, other,	0	0	0	0	0	0	0	0	0	0
		No data,	6	0	1	4	0	1	0	0	0	0

UPFOLLOW REPORT OF 1,294 PATIENTS PREVIOUSLY DISCHARGED FROM MONT ALTO SANATORIUM—Continued.

Admitted as	Discharged as	Upfollowed as	Interval between Discharge and Lost Upfollow.								
			Less than 6 Mos.	6-12 Mos.	12-18 Mos.	18-24 Mos.	24-30 Mos.	30-36 Mos.	36-42 Mos.	Over 42 Mos.	No data.
Far Advanced, 311= 24.0%	Cured, 0= 0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Apparently Cured, 2= 0.6%	Improved, 1	0	0	1	0	0	0	0	0	0
		Stationary, 1	0	0	0	0	1	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Arrested, 67= 21.5%	Improved, 22	0	10	4	3	4	1	0	0	0
		Stationary, 26	0	17	4	2	2	1	0	0	0
		Progressive, 10	0	7	2	0	0	1	0	0	0
		Died, tuberculosis, 5	2	1	0	1	0	0	0	1	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 4	0	1	0	2	0	1	0	0	0
	Apparently Arrested, 5= 1.6%	Improved, 3	0	0	3	0	0	0	0	0	0
		Stationary, 1	0	0	0	1	0	0	0	0	0
		Progressive, 1	0	1	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Improved, 143= 46.0%	Improved, 31	0	14	3	2	6	4	1	1	0
		Stationary, 36	0	17	6	1	9	1	1	1	0
		Progressive, 43	0	19	13	3	6	0	1	1	0
		Died, tuberculosis, 25	6	10	4	0	3	1	0	1	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 8	0	4	3	1	0	0	0	0	0

Unimproved, ---------- 94= 30.2%	Improved, ---------- 5	0	0	3	0	6	0	0	2	0
	Stationary, ---------- 7	0	2	5	0	0	0	1	0	0
	Progressive, ---------- 17	0	9	2	2	2	1	1	0	0
	Died, tuberculosis, ------ 62	33	17	5	6	1	0	0	0	0
	Died, other, ---------- 1	0	1	0	0	0	0	0	0	0
	No data, ---------- 2	0	0	2	0	0	0	0	0	0

Average Age.

			Total.	No Data.	Weight. Gain.	Loss.	Stationary.
Incipient, ----------	M., 19.1 years F., 20.4 years	Incipient, ----------	334	6	234	59	35
Moderately Advanced, ----------	M., 30.6 years F., 20.6 years	Moderately Advanced, -----	602	33	311	186	72
Far Advanced, ----------	M., 35.1 years F., 31.8 years	Far Advanced, ----------	218	22	62	108	26

Average Hospital Attendance.

			Total.	No Data.	Sputum. Not Examined.	Positive.	Negative.
Incipient, ----------	M., 169.6 days F., 160.3 days	Incipient, ----------	334	5	214	22	93
Moderately Advanced, ----------	M., 160.6 days F., 154.8 days	Moderately Advanced, -----	602	27	311	72	192
Far Advanced, ----------	M., 153.2 days F., 172.4 days	Far Advanced, ----------	218	17	106	56	39

UPFOLLOW JULY 1, 1915, TO JANUARY 1, 1916.

Admitted as	Discharged as	Upfollowed as
Incipient, ... 281= 84.2% *53= 15.8%*	Cured, ... 0= 0.0% *0= 0.0%*	Improved, ... 0 *0* Stationary, ... 0 *0* Progressive, ... 0 *0*
	Apparently Cured, ... 59= 21.0% *16= 30.2%*	Improved, ... 47 *13* Stationary, ... 9 *3* Progressive, ... 3 *0*
	Arrested, .. 109= 38.8% *28= 52.8%*	Improved, ... 74 *18* Stationary, ... 25 *9* Progressive, ... 10 *1*
	Apparently Arrested, 26= 9.2% *1= 2.0%*	Improved, ... 20 *1* Stationary, ... 3 *0* Progressive, ... 3 *0*
	Improved, . 84= 29.9% *4= 7.5%*	Improved, ... 60 *4* Stationary, ... 19 *0* Progressive, ... 5 *0*
	Unimproved, 3= 1.1% *4= 7.5%*	Improved, ... 2 *3* Stationary, ... 0 *1* Progressive, ... 1 *0*
Moderately Advanced, 490= 2.2% *90= 15.5%*	Cured, ... 0= 0.0% *0= 0.0%*	Improved, ... 0 *0* Stationary, ... 0 *0* Progressive, ... 0 *0*
	Apparently Cured, .. 32= 6.5% *6= 6.7%*	Improved, ... 20 *4* Stationary, ... 7 *2* Progressive, ... 5 *0*
	Arrested, .. 195= 39.8% *56= 62.2%*	Improved, ... 118 *32* Stationary, ... 53 *13* Progressive, ... 24 *11*

Admitted as	Discharged as	Upfollowed as
Far Advanced, 189= 92.7% *15= 7.3%*	Apparently Arrested, 14= 2.9% *3= 3.3%*	Improved, ... 11 *2* Stationary, ... 2 *0* Progressive, ... 1 *1*
	Improved, . 200= 40.8% *23= 25.6%*	Improved, ... 105 *14* Stationary, ... 57 *6* Progressive, ... 38 *3*
	Unimproved, 49= 10.0% *2= 2.2%*	Improved, ... 20 *2* Stationary, ... 17 *0* Progressive, ... 12 *0*
	Cured, ... 0= 0.0% *0= 0.0%*	Improved, ... 0 *0* Stationary, ... 0 *0* Progressive, ... 0 *0*
	Apparently Cured, .. 2= 1.1% *0= 0.0%*	Improved, ... 1 *0* Stationary, ... 1 *0* Progressive, ... 0 *0*
	Arrested, .. 51= 27.0% *7= 46.7%*	Improved, ... 19 *3* Stationary, ... 23 *3* Progressive, ... 9 *1*
	Apparently Arrested, 4= 2.1% *1= 6.6%*	Improved, ... 2 *1* Stationary, ... 1 *0* Progressive, ... 1 *0*
	Improved, . 104= 55.0% *6= 40.0%*	Improved, ... 29 *2* Stationary, ... 34 *2* Progressive, ... 41 *2*
	Unimproved, 28= 14.8% *1= 6.6%*	Improved, ... 5 *0* Stationary, ... 6 *1* Progressive, ... 17 *0*

Cases in *italic* treated with Tubercle Bacilli Products (Tuberculin).

INCIDENCE OF TUBERCULOSIS IN FAMILIES OF 1,294 FORMER PATIENTS OF THE STATE SANATORIUM AT MONT ALTO AS TRACED THE LAST HALF OF 1915.

Number in Family Besides Patient.	Total.	Patients.													
		Classification According to Number of Tuberculous Adults in Family of Each.							Classification According to Number of Tuberculous Children in Family of Each.							
		No Data.	None.	1	2	3	4	5	No Data.	None.	1	2	3	4	5	8
Undetermined,	30	24	1	2	3	0	0	0	26	1	1	1	0	0	1	0
None,	6	0	6	0	0	0	0	0	0	6	0	0	0	0	0	0
1,	96	0	14	82	0	0	0	0	0	95	1	0	0	0	0	0
2,	144	0	16	115	13	0	0	6	0	137	5	2	0	0	0	0
3,	232	0	31	176	25	0	0	0	0	189	37	6	0	0	0	0
4,	194	0	24	143	22	5	0	0	0	151	23	17	3	0	0	0
5,	181	0	20	135	25	1	0	0	0	128	25	21	7	0	0	0
6,	137	0	18	106	12	0	1	0	0	91	25	17	4	0	0	0
7,	115	0	13	85	14	1	2	0	0	69	24	9	6	4	3	0
8,	87	0	17	53	13	4	0	0	0	53	12	10	6	6	0	0
9,	38	0	5	25	5	1	0	2	0	20	6	6	3	1	2	0
10,	14	0	2	10	1	1	0	0	0	7	0	4	2	0	0	1
11,	14	0	3	7	2	0	2	0	0	5	6	2	0	1	0	0
12,	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0
13,	4	0	0	1	0	0	0	3	0	0	0	0	1	0	3	0
15,	1	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0
Summary,	1,294	24	170	941	136	13	5	5	26	954	165	95	32	12	9	1

ADDITIONAL UPFOLLOW NOTES ON EX-PATIENTS OF THIS SERIES.

Sleeping Quarters.

Total,	1,154
Separate room,	825
Separate bed,	35
Sleeping tent,	0
Sleeping porch,	0
No precautions,	216
No data,	78

Condition of House.

Total,	1,154
Clean,	637
Fair,	364
Poor,	86
No data,	67

Reason for Discharge.

Total,	1,294
Voluntary,	898
Dismissed,	48
Deserted,	16
Other sanatoria,	0
Pay roll,	60
Against advice,	264
By request,	8

Symptoms.

Fever.	Night Sweats.	Hemorrhage.
219	131	43

UPFOLLOW REPORT OF DISCHARGED PATIENTS IN REGARD TO SUBSEQUENT DISPENSARY ATTENDANCE.

July 1, 1915, to January 1, 1916.

Dispensary.	Total.	No Attendance.	Attendance.		
			Total.	Regular.	Irregular.
Total,	1,154	581	573	261	312
Wilkes-Barre,	77	32	45	31	14
York,	5	1	4	3	1
Erie,	5	3	2	0	2
Carlisle,	1	1	0	0	0
Lebanon,	8	7	1	1	0
West Chester,	0	0	0	0	0
Bellefonte,	0	0	0	0	0
Emporium,	0	0	0	0	0
Johnstown,	5	3	2	1	1
Lewistown,	0	0	0	0	0
Chambersburg,	0	0	0	0	0
Chester,	32	17	15	4	11
Harrisburg,	79	36	43	34	9
Altoona,	4	2	2	2	0
Butler,	14	10	4	3	1
Berwick,	19	2	17	8	9
McConnellsburg,	0	0	0	0	0
Honesdale,	5	2	3	3	0
Milford,	0	0	0	0	0
Pittsburgh,	41	16	25	13	12
Philadelphia, 1630 Poplar Street,	366	237	129	9	120
Rochester,	0	0	0	0	0
Doylestown,	0	0	0	0	0
Kittanning,	6	4	2	1	1
New Bloomfield,	0	0	0	0	0
Mifflintown,	2	1	1	0	1
Coudersport,	0	0	0	0	0
Danville,	0	0	0	0	0
Mifflinburg,	0	0	0	0	0
Meyersdale,	3	3	0	0	0
Norristown,	1	1	0	0	0
Oil City,	0	0	0	0	0
Williamsport,	7	1	6	1	5
Tionesta,	0	0	0	0	0
New Castle,	0	0	0	0	0
Sharon,	0	0	0	0	0
Reading,	0	0	0	0	0
Bradford,	0	0	0	0	0

UPFOLLOW REPORT OF DISCHARGED PATIENTS IN REGARD TO SUBSEQUENT DISPENSARY ATTENDANCE—Continued.

Dispensary.	Total.	No Attendance.	Attendance.		
			Total.	Regular.	Irregular.
Lancaster,	7	2	5	3	2
Scranton,	37	8	29	13	16
Meadville,	0	0	0	0	0
Ridgway,	2	0	2	1	1
Clarion,	1	1	0	0	0
Towanda,	9	5	4	3	1
Mauch Chunk,	0	0	0	0	0
Lock Haven,	0	0	0	0	0
Huntingdon,	1	0	1	0	1
Indiana,	0	0	0	0	0
Montrose,	0	0	0	0	0
Selinsgrove,	1	0	1	0	1
Allentown,	7	4	3	2	1
Easton,	4	1	3	3	0
Shamokin,	4	1	3	1	2
Warren,	1	0	1	0	1
Monongahela,	1	0	1	1	0
Tunkhannock,	1	1	0	0	0
Greensburg,	2	2	0	0	0
Wellsboro,	0	0	0	0	0
Dushore,	0	0	0	0	0
Gettysburg,	0	0	0	0	0
Everett,	7	6	1	0	1
Clearfield,	1	0	1	1	0
Waynesburg,	0	0	0	0	0
Punxsutawney,	3	2	1	0	1
Stroudsburg,	0	0	0	0	0
Pottsville,	6	4	2	2	0
Uniontown,	0	0	0	0	0
Hazleton,	11	8	3	2	1
Hastings,	1	1	0	0	0
Connellsville,	0	0	0	0	0
Mt. Carmel,	8	7	1	0	1
Franklin,	3	0	3	1	2
Jenkintown,	0	0	0	0	0
Columbia,	2	1	1	1	0
Coatesville,	2	0	2	2	0
Phoenixville,	0	0	0	0	0
Mt. Pleasant,	0	0	0	0	0
Lykens,	0	0	0	0	0
Tyrone,	1	1	0	0	0
Philipsburg,	1	0	1	0	1
McKeesport,	2	2	0	0	0
Bristol,	1	1	0	0	0
Carbondale,	4	3	1	1	0
Shenandoah,	10	4	6	4	2
Hanover,	0	0	0	0	0
Bangor,	2	0	2	0	2
Monessen,	3	1	2	0	2
Lansford,	0	0	0	0	0
Titusville,	0	0	0	0	0
Tamaqua,	0	0	0	0	0
Milton,	0	0	0	0	0
Philadelphia, 1400 South 24th Street,	185	81	104	51	53
Pittston,	5	2	3	3	0
DuBois,	2	0	2	1	1
West Fairview,	0	0	0	0	0
Susquehanna,	0	0	0	0	0
South Bethlehem,	8	0	8	3	5
Corry,	0	0	0	0	0
Homestead,	8	4	4	3	1
Braddock,	8	2	6	1	5
Brookville,	3	0	3	3	0
Beaver Falls,	0	0	0	0	0
Washington,	0	0	0	0	0
Pottstown,	0	0	0	0	0
Philadelphia, 1731 Orthodox Street,	74	39	35	22	13
Waynesboro,	2	2	0	0	0
Wilkinsburg,	12	3	9	8	1
Sunbury,	7	1	6	5	1
Tarentum,	1	0	1	1	0
Renovo,	0	0	0	0	0
Nanticoke,	5	0	5	2	3
Brownsville,	0	0	0	0	0
Kane,	6	1	5	3	2
Cresson,	0	0	0	0	0
Ardmore,	2	1	1	0	1

UPFOLLOW JANUARY 1 TO JULY 1, 1915, OF FORMER PATIENTS OF MONT ALTO SANATORIUM GROUPED ACCORDING TO ORIGINAL ADMISSION CLASSIFICATION AND BY SEX, COLOR, SOCIAL CONDITION AND AGE, AND A COMPARISON OF OCCUPATION AND INCOME BEFORE ADMISSION AND AS UPFOLLOWED.

INCIPIENT—240 CASES.

Sex.

124	Male.
116	Female.

Color.

Male.		Female.	
5	Black.	1	Black.
119	White.	115	White.
124	Total.	116	Total.

Social Condition.

112	Single.	84	Single.
12	Married.	23	Married.
0	Widowered.	5	Widowed.
0	Divorced.	1	Divorced.
0	Separated.	3	Separated.
124	Total.	116	Total.

Age Incident.

5— 9 years,	9	5— 9 years,	6
10—14 years,	68	10—14 years,	33
15—19 years,	27	15—19 years,	24
20—29 years,	14	20—29 years,	32
30—39 years,	6	30—39 years,	14
40—49 years,	0	40—49 years,	5
50—59 years,	0	50—59 years,	2
60—69 years,	0	60—69 years,	0
Total,	124	Total,	116

Average Age.

Male,	15.1 years.
Female,	20.1 years.

MODERATELY ADVANCED—466 CASES.

Sex.

239	Male.
227	Female.

Color.

Male.		Female.	
8	Black.	9	Black.
231	White.	218	White.
239	Total.	227	Total.

Social Condition.

118 Single.	134 Single.
105 Married.	65 Married.
14 Widowered.	16 Widowed.
0 Divorced.	7 Divorced.
2 Separated.	5 Separated.
239 Total.	227 Total.

Age Incident.

5— 9 years,	4	5— 9 years,	2
10—14 years,	17	10—14 years,	21
15—19 years,	23	15—19 years,	44
20—29 years,	80	20—29 years,	78
30—39 years,	50	30—39 years,	53
40—49 years,	39	40—49 years,	22
50—59 years,	20	50—59 years,	7
60—69 years,	6	60—69 years,	0
Total,	239	Total,	227

Average Age.

Male, ...31.2 years.
Female, ...26.5 years.

FAR ADVANCED—268 CASES.

Sex.

177 Male.
91 Female.

Color.

Male.	Female.
5 Black.	5 Black.
172 White.	86 White.
177 Total.	91 Total.

Social Condition.

78 Single.	40 Single.
87 Married.	36 Married.
8 Widowered.	14 Widowed.
4 Divorced.	0 Divorced.
0 Separated.	1 Separated.
177 Total.	91 Total.

Age Incident.

5— 9 years,	0	5— 9 years,	0
10—14 years,	1	10—14 years,	2
15—19 years,	14	15—19 years,	10
20—29 years,	53	20—29 years,	30
30—39 years,	54	30—39 years,	28
40—49 years,	36	40—49 years,	16
50—59 years,	16	50—59 years,	3
60—69 years,	3	60—69 years,	2
Total,	177	Total,	91

Average Age.

Male, ...33.8 years.
Female, ...32.0 years.

OCCUPATIONS AND WEEKLY INCOME.

Incipient Males,	124	
Under occupational age,	75	Original.
No occupation,	10	

Of the 10 cases with no original occupation, none were occupied on admission to the sanatorium and 3 at present.

Total occupied on admission,	22
Average weekly income of 21 cases,	$9.62

There were 27 cases with no occupation on admission to the sanatorium; of these 14 were reported as occupied, 12 as unoccupied and no data on one.

There were 22 cases with occupations on admission to the sanatorium; of these 17 were reported as occupied at present and 5 as unoccupied.

Total occupied at present,	31
Average weekly income of 30 cases,	$10.83

Incipient Females,	114	
Under occupational age,	40	Original.
No occupation,	18	

Of the 18 cases with no original occupation, one was occupied on admission to the sanatorium and 11 at present.

Total occupied on admission,	42
Average weekly income of 26 cases,	$5.46
Housewives,	15

There were 32 cases with no occupation on admission to the sanatorium; of these 21 cases were as occupied at present and 11 as unoccupied.

There were 42 cases occupied on admission to the sanatorium; of these 35 were reported as occupied, 5 as unoccupied and no data on 2.

Total occupied at present,	56
Average weekly income of 35 cases,	$5.90.
Housewives,	13

Moderately Advanced Males,	206	
Under occupational age,	34	Original.
No occupation,	0	

Total occupied on admission,	84
Average weekly income of 84 cases,	$12.94

There were 88 cases with no occupation on admission to the sanatorium; of these 43 were reported as occupied, 44 as unoccupied and no data on one.

There were 84 cases with occupations on admission to the sanatorium; of these 62 were reported as occupied at present, 20 as unoccupied and no data on 2.

Total occupied at present,	105
Average weekly income of 99 cases,	$11.03

Moderately Advanced Females,	215	
Under occupational age,	23	Original.
No occupation,	25	

There were 25 cases with no original occupation; of these 3 were reported as occupied on admission to the sanatorium and 10 at present.

Total occupied on admission,	120
Average weekly income of 59 cases,	$7.08
Housewives,	57

There were 69 cases with no occupation on admission to the sanatorium; of these 34 were reported as occupied at present and 35 as unoccupied.

There were 120 cases with occupations on admission to the sanatorium; of these 93 were reported as occupied at present, 19 as unoccupied and no data on 8.

Total occupied at present,		130
Average weekly income of 71 cases,		$6.10
Housewives,		52
Far Advanced Males,	111	Original.
Under occupational age,	0	
No occupation,	2	

There were 2 cases with original occupation; these were reported as unoccupied on admission to the sanatorium and one occupied at present.

Total occupied on admission,	61
Average weekly income of 59 cases,	$13.12

There were 50 cases with no occupation on admission to the sanatorium; of these 18 were reported as occupied, 30 as unoccupied and no data on 2.

There were 61 cases with occupations on admission to the sanatorium; of these 29 were reported as occupied at present, 30 as unoccupied and no data on 2.

Total occupied at present,		46
Average weekly income of 45 cases,		$10.22
Far Advanced Females,	64	Original.
Under occupational age,	1	
No occupation,	9	

Of the 9 cases with no origianl occupation, none were occupied on admission to the sanatorium and one at present.

Total occupied on admission,	42
Average weekly income of 16 cases,	$6.81
Housewives,	25

There were 21 cases with no occupation on admission to the sanatorium; of these 4 were reported as occupied at present and 17 as unoccupied.

There were 42 with occupations on admission to the sanatorium; of these 31 were reported as occupied at present and 11 as unoccupied.

Total occupied at present,	35
Average weekly income of 13 cases,	$5.48
Housewives,	19

UPFOLLOW JULY 1, 1915, TO JANUARY 1, 1916.
(Continuation of Preceding Table.)

INCIPIENT—336 CASES.

Sex.

179..... Male.
157..... Female.

Color.

Male.		Female.	
9	Black.	3	Black.
170	White.	154	White.
179	Total.	157	Total.

Social Condition.

140	Single.	116	Single.
34	Married.	29	Married.
3	Widowered.	10	Widowed.
1	Divorced.	1	Divorced.
1	Separated.	1	Separated.
179	Total.	157	Total.

Age Incident.

5— 9 years,	16	5— 9 years,	19
10—14 years,	71	10—14 years,	36
15—19 years,	37	15—19 years,	31
20—29 years,	25	20—29 years,	41
30—39 years,	16	30—39 years,	21
40—49 years,	12	40—49 years,	5
50—59 years,	2	50—59 years,	3
60—69 years,	0	60—69 years,	1
Total,	179	Total,	157

Average Age.

Male, ...19.1 years.
Female, ...20.4 years.

MODERATELY ADVANCED—647 CASES.

Sex.

376..... Male.
271..... Female.

Color.

Male.		Female.	
9	Black.	17	Black.
367	White.	254	White.
376	Total.	271	Total.

Social Condition.

187	Single.	140	Single.
168	Married.	99	Married.
10	Widowered.	17	Widowed.
4	Divorced.	5	Divorced.
7	Separated.	10	Separated.
376	Total.	271	Total.

Age Incident.

5— 9 years,	7	5— 9 years,	0
10—14 years,	25	10—14 years,	17
15—19 years,	43	15—19 years,	46
20—29 years,	121	20—29 years,	107
30—39 years,	89	30—39 years,	67
40—49 years,	61	40—49 years,	26
50—59 years,	24	50—59 years,	7
60—69 years,	6	60—69 years,	1
Total,	376	Total,	271

Average Age.

Male, ...30.6 years.
Female, ...20.6 years.

FAR ADVANCED—311 CASES.

Sex.

209 Male.
102 Female.

Color.

Male.		Female.	
8	Black.	6	Black.
201	White.	96	White.
209	Total.	102	Total.

Social Condition.

79	Single.	33	Single.
115	Married.	52	Married.
11	Widowered.	12	Widowed.
2	Divorced.	2	Divorced.
2	Separated.	3	Separated.
209	Total.	102	Total.

Age Incident.

5— 9 years,	0	5— 9 years,	0
10—14 years,	0	10—14 years,	1
15—19 years,	6	15—19 years,	10
20—29 years,	70	20—29 years,	26
30—39 years,	63	30—39 years,	35
40—49 years,	44	40—49 years,	20
50—59 years,	22	50—59 years,	7
60—69 years,	4	60—69 years,	3
Total,	209	Total,	102

Average Age.

Male, ...35.1 years.
Female, ...31.8 years.

OCCUPATIONS AND WEEKLY INCOME.

Incipient Males,	178	
Under occupational age,	87	Original.
No occupation,	28	

Of the 28 cases with no original occupation, 3 were reported as occupied on admission to the sanatorium and 19 at present.

Total occupied on admission,	43
Average weekly income of 42 cases,	$11.71

There were 48 cases with no occupation on admission to the sanatorium; of these 33 were reported as occupied at present and 15 as unoccupied.

There were 43 cases with occupations on admission to the sanatorium; of these 37 were reported as occupied at present and 6 as unoccupied.

Total occupied at present,		70
Average weekly income of 63 cases,		$10.40
Incipient Females,	156	
Under occupational age,	55	Original.
No occupation,	29	

Of the 29 cases with no occupation originally, 3 were reported as occupied on admission to the santorium and 12 at present.

Total occupied on admission,	57
Average weekly income of 36 cases,	$6.00
Housewives,	19

There were 44 cases with no occupation on admission to the sanatorium; of these 18 were reported as occupied at present and 26 as unoccupied.

There were 57 cases with occupations on admission to the sanatorium; of these 51 were reported as occupied at present and 6 as unoccupied.

Total occupied at present,		69
Average weekly income of 46 cases,		$4.70
Housewives,		9
Moderately Advanced Males,	344	
Under occupational age,	31	Original.
No occupation,	23	

Of the 23 cases with no original occupation, 2 were reported as occupied on admission to the sanatorium and 10 at present.

Total occupied on admission,	166
Average weekly income of 162 cases,	$11.69

There were 147 cases with no occupation on admission to the sanatorium; of these 72 were reported as occupied at present, 67 as unoccupied and no data on 8.

There were 166 cases occupied on admission to the sanatorium; of these 125 were reported as occupied at present, 35 as unoccupied and no data on 6.

Total occupied at present,		197
Average weekly income of 179 cases,		$11.71
Moderately Advanced Females,	258	
Under occupational age,	16	Original.
No occupation,	38	

Of the 38 cases with no original occupation, 2 were occupied on admission to the sanatorium and 13 at present.

Total occupied on admission,	156
Average weekly income of 74 cases,	$4.74
Housewives,	80

There were 86 cases with no occupation on admission to the sanatorium; of these 39 were reported as occupied at present and 47 as unoccupied.

There were 156 cases with occupations on admission to the sanatorium; of these 141 were reported as occupied and 15 as unoccupied at present.

Total occupied at present,		180
Average weekly income of 91 cases,		$5.41
Housewives,		80
Far Advanced Males,	153	
Under occupational age,	0	Original.
No occupation,	2	

The 2 cases with no original occupation were unoccupied on admission to the sanatorium but reported occupied at present.

Total occupied on admission,	72
Average weekly income of 68 cases,	$12.50

There were 81 cases with no occupation on admission to the sanatorium; of these 31 were reported as occupied at present, 48 as unoccupied and no data on 2.

There were 72 cases with occupations on admission to the sanatorium; of these 32 were reported as occupied at present, 34 as unoccupied and no data on 6.

Total occupied at present,		63
Average weekly income of 54 cases,		$12.06
Far Advanced Females,	65	
Under occupational age,	0	Original.
No occupation,	5	

Of the 5 cases with no original occupation, none were occupied on admission to the sanatorium and none at present.

Total occupied on admission,	51
Average weekly income of 14 cases,	$7.80
Housewives,	36

There were 14 cases with no occupation on admission to the sanatorium; of these 2 were reported as occupied at present and 12 as unoccupied.

There were 51 cases with occupations on admission to the sanatorium; of these 42 were reported as occupied at present, 5 as unoccupied and no data on 4.

Total occupied at present,	44
Average weekly income of 10 cases,	$6.30
Housewives,	28

UPFOLLOW REPORT OF 285 PATIENTS PREVIOUSLY DISCHARGED FROM CRESSON SANATORIUM.

Upfollow January 1 to July 1, 1915.

Admitted as	Discharged as	Upfollowed as	Interval between Discharge and Last Upfollow.							
			Less than 6 Mos.	6–12 Mos.	12-18 Mos.	18-24 Mos.	24-30 Mos.	30-36 Mos.	36-42 Mos.	Over 42 Mos.	No data.
Incipient, 89= 31.2%	Cured, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Apparently Cured, 15= 16.8%	Improved, 10	0	3	3	3	1	0	0	0	0
		Stationary, 5	0	1	3	1	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Arrested, 63= 70.8%	Improved, 40	0	16	9	13	2	0	0	0	0
		Stationary, 12	0	7	2	3	0	0	0	0	0
		Progressive, 9	0	3	2	4	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 2	0	1	1	0	0	0	0	0	0
	Apparently Arrested, 1= 1.1%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 1	0	1	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Improved, 9= 10.1%	Improved, 4	0	1	1	1	1	0	0	0	0
		Stationary, 1	0	1	0	0	0	0	0	0	0
		Progressive, 2	0	2	0	0	0	0	0	0	0
		Died, tuberculosis, 1	0	1	0	0	0	0	0	0	0
		Died, other, 1	0	0	0	1	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0

UPFOLLOW REPORT OF 285 PATIENTS PREVIOUSLY DISCHARGED FROM CRESSON SANATORIUM—Continued.

Admitted as	Discharged as	Upfollowed as	Interval between Discharge and Last Upfollow.							
			Less than 6 Mos.	6-12 Mos.	12-18 Mos.	18-24 Mos.	24-30 Mos.	30-36 Mos.	36-42 Mos.	Over 42 Mos.	No data.
Moderately Advanced, 123= 43.2%	Unimproved, 1= 1.1%	Improved, 1	0	0	1	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Cured, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Apparently Cured, 4= 3.3%	Improved, 2	0	0	1	1	0	0	0	0	0
		Stationary, 1	0	1	0	0	0	0	0	0	0
		Progressive, 1	0	0	1	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Arrested, 61= 49.6%	Improved, 34	0	17	12	4	1	0	0	0	0
		Stationary, 16	0	11	3	2	0	0	0	0	0
		Progressive, 8	0	6	1	1	0	0	0	0	0
		Died, tuberculosis, 1	0	0	1	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 2	0	2	0	0	0	0	0	0	0
	Apparently Arrested, 1= 0.8%	Improved, 1	0	1	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0

Improved, ---------- 49= 39.8%	Improved, ----------	29	0	15	12	2	0	0	0	0	0	0	0
	Stationary, ----------	10	0	7	2	1	0	0	0	0	0	0	0
	Progressive, ----------	6	0	5	1	0	0	0	0	0	0	0	0
	Died, tuberculosis, ------	3	0	1	1	1	0	0	0	0	0	0	0
	Died, other, ----------	1	0	0	0	0	0	0	0	0	0	0	0
	No data, ----------	0	0	0	0	0	0	0	0	0	0	0	0
Unimproved, --------- 8= 6.5%	Improved, ----------	3	0	2	1	0	0	0	0	0	0	0	0
	Stationary, ----------	0	0	0	0	0	0	0	0	0	0	0	0
	Progressive, ----------	2	0	1	1	0	0	0	0	0	0	0	0
	Died, tuberculosis, ------	3	0	0	1	1	0	0	0	0	0	0	0
	Died, other, ----------	0	0	0	0	0	0	0	0	0	0	0	0
	No data, ----------	0	0	0	0	0	0	0	0	0	0	0	0
Cured, ---------- 0= 0.0%	Improved, ----------	0	0	0	0	0	0	0	0	0	0	0	0
	Stationary, ----------	0	0	0	0	0	0	0	0	0	0	0	0
	Progressive, ----------	0	0	0	0	0	0	0	0	0	0	0	0
	Died, tuberculosis, ------	0	0	0	0	0	0	0	0	0	0	0	0
	Died, other, ----------	0	0	0	0	0	0	0	0	0	0	0	0
	No data, ----------	0	0	0	0	0	0	0	0	0	0	0	0
Apparently Cured, ---- 0= 0.0%	Improved, ----------	0	0	0	0	0	0	0	0	0	0	0	0
	Stationary, ----------	0	0	0	0	0	0	0	0	0	0	0	0
	Progressive, ----------	0	0	0	0	0	0	0	0	0	0	0	0
	Died, tuberculosis, ------	0	0	0	0	0	0	0	0	0	0	0	0
	Died, other, ----------	0	0	0	0	0	0	0	0	0	0	0	0
	No data, ----------	0	0	0	0	0	0	0	0	0	0	0	0
Arrested, ---------- 17= 23.3%	Improved, ----------	8	0	2	**5**	1	0	0	0	0	0	0	0
	Stationary, ----------	5	0	2	**2**	1	0	0	0	0	0	0	0
	Progressive, ----------	3	0	1	1	1	0	0	0	0	0	0	0
	Died, tuberculosis, ------	1	0	0	0	0	0	0	0	0	0	0	0
	Died, other, ----------	0	0	0	0	0	0	0	0	0	0	0	0
	No data, ----------	0	0	0	0	0	0	0	0	0	0	0	0
Apparently Arrested, - 0= 0.0%	Improved, ----------	0	0	0	0	0	0	0	0	0	0	0	0
	Stationary, ----------	0	0	0	0	0	0	0	0	0	0	0	0
	Progressive, ----------	0	0	0	0	0	0	0	0	0	0	0	0
	Died, tuberculosis, ------	0	0	0	0	0	0	0	0	0	0	0	0
	Died, other, ----------	0	0	0	0	0	0	0	0	0	0	0	0
	No data, ----------	0	0	0	0	0	0	0	0	0	0	0	0
Far Advanced, ------- 73= 25.6%	Improved, ----------	16	0	6	2	2	0	0	0	0	0	0	0
	Stationary, ----------	6	0	3	2	1	0	0	0	0	0	0	0
	Progressive, ----------	8	0	6	2	0	0	0	0	0	0	0	0
	Died, tuberculosis, ------	6	0	2	0	2	1	0	0	0	0	0	0
	Died, other, ----------	1	0	1	0	0	0	0	0	0	0	0	0
	No data, ----------	2	0	0	0	1	0	0	0	0	0	0	0
Improved, ---------- 38= 45.2%													

UPFOLLOW REPORT OF 285 PATIENTS PREVIOUSLY DISCHARGED FROM CRESSON SANATORIUM—Continued.

Admitted as	Discharged as	Upfollowed as		Interval between Discharge and Last Upfollow.								
				Less than 6 Mos.	6-12 Mos.	12-18 Mos.	18-24 Mos.	24-30 Mos.	30-36 Mos.	36-42 Mos.	Over 42 Mos.	No data.
	Unimproved, ---------- 23= 31.5%	Improved, ----------	0	0	0	0	0	0	0	0	0	0
		Stationary, ----------	4	0	3	1	0	0	0	0	0	0
		Progressive, ----------	3	0	3	0	0	0	0	0	0	0
		Died, tuberculosis, ------	16	10	2	3	1	0	0	0	0	0
		Died, other, ----------	0	0	0	0	0	0	0	0	0	0
		No data, ----------	0	0	0	0	0	0	0	0	0	0

Average Age.

Incipient, ----------	M., 25.0 years.	
	F., 18.8 years.	
Moderately Advanced, -----	M., 31.9 years.	
	F., 30.3 years.	
Far Advanced, ----------	M., 32.5 years.	
	F., 30.3 years.	

Average Hospital Attendance.

Incipient, ----------	M., 154.5 days.	
	F., 149.0 days.	
Moderately Advanced, ------	M., 144.1 days.	
	F., 157.0 days.	
Far Advanced, ----------	M., 175.0 days.	
	F., 169.2 days.	

Weight.

	Total.	No data.	Gain.	Loss.	Stationary.
Incipient, ----------	87	3	52	27	5
Moderately Advanced, --------	115	3	57	45	10
Far Advanced, ----------	49	3	17	23	6

Sputum.

	Total.	No data.	Not Examined.	Positive.	Negative.
Incipient, ----------	87	1	66	5	15
Moderately Advanced, --------	115	2	94	5	14
Far Advanced, ----------	49	4	31	10	4

UPFOLLOW JANUARY 1 TO JULY 1, 1915.

Admitted as		Discharged as		Upfollowed as	
Incipient, ...	31= 36.5% *54= 63.5%*	Cured, ...	0= 0.0% *0= 0.0%*	Improved, ... Stationary, ... Progressive, ...	0 *0* 0 *0* 0 *0*
		Apparently Cured, ..	5= 16.1% *10= 18.5%*	Improved, ... Stationary ..... Progressive, ...	4 *6* 1 *4* 0 *0*
		Arrested, ..	22= 71.0% *39= 72.2%*	Improved, ... Stationary, ... Progressive, ...	15 *25* 3 *9* 4 *5*
		Apparently Arrested,	1= 3.2% *0= 0.0%*	Improved, ... Stationary, ... Progressive, ...	0 *0* 1 *0* 0 *0*
		Improved, .	2= 6.5% *5= 9.3%*	Improved, ... Stationary, ... Progressive, ...	2 *2* 0 *1* 0 *2*
		Unimproved,	1= 3.2% *0= 0.0%*	Improved, ... Stationary, ... Progressive, ...	1 *0* 0 *0* 0 *0*
Moderately Advanced,	35= 31.0% *78= 69.0%*	Cured, ...	0= 0.0% *0= 0.0%*	Improved, ... Stationary, ... Progressive, ...	0 *0* 0 *0* 0 *0*
		Apparently Cured, ..	1= 2.9% *3= 3.8%*	Improved, ... Stationary, ... Progressive, ...	0 *2* 0 *1* 1 *0*
		Arrested, ..	13= 37.1% *45= 57.7%*	Improved, ... Stationary, ... Progressive, ...	8 *26* 4 *12* 1 *7*

UPFOLLOW JANUARY 1 TO JULY 1, 1915—Continued.

Admitted as		Discharged as		Upfollowed as	
		Apparently Arrested,	0= 0.0% *1= 1.3%*	Improved, ...	0 *1*
				Stationary, ...	0 *0*
				Progressive, ...	0 *0*
		Improved, .	18= 51.4% *27= 34.6%*	Improved, ...	11 *18*
				Stationary, ...	5 *5*
				Progressive.	2 *4*
		Unimproved	3= 8.6% *2= 2.6%*	Improved, ...	2 *1*
				Stationary, ...	0 *0*
				Progressive, ...	1 *1*
Far Advanced,	18= 38.3% *39= 61.7%*	Cured, ...	0= 0.0% *0= 0.0%*	Improved, ...	0 *0*
				Stationary, ...	0 *0*
				Progressive, ...	0 *0*
		Apparently Cured, ..	0= 0.0% *0= 0.0%*	Improved, ...	0 *0*
				Stationary, ...	0 *0*
				Progressive, ...	0 *0*
		Arrested, ..	1= 5.5% *15= 51.7%*	Improved, ...	0 *8*
				Stationary, ...	1 *4*
				Progressive, ...	0 *3*
		Apparently Arrested,	0= 0.0% *0= 0.0%*	Improved, ...	0 *0*
				Stationary, ...	0 *0*
				Progressive, ...	0 *0*
		Improved, .	10= 55.5% *14= 48.3%*	Improved, ...	3 *7*
				Stationary.	3 *3*
				Progressive, ...	4 *4*
		Unimproved,	7= 38.9% *0= 0.0%*	Improved, ...	0 *0*
				Stationary	4 *0*
				Progressive, ...	3 *0*

Cases in *italic* treated with Tubercle Bacilli Products (Tuberculin).

INCIDENCE OF TUBERCULOSIS IN FAMILIES OF 285 FORMER PATIENTS OF THE STATE SANATORIUM AT CRESSON AS TRACED THE FIRST HALF OF 1915.

Number in Family Besides Patient.	Total.	Patients.											
		Classification According to Number of Tuberculous Adults in Family of Each.							Classification According to Number of Tuberculous Children in Family of Each.				
		No Data.	None.	1	2	3	4	9	No Data.	None.	1	2	3
Undetermined,	15	9	0	3	2	0	0	1	9	4	2	0	0
None,	0	0	0	0	0	0	0	0	0	0	0	0	0
1,	17	0	2	15	0	0	0	0	0	17	0	0	0
2,	27	0	4	21	2	0	0	0	0	24	3	0	0
3,	38	0	6	28	4	0	0	0	0	30	6	2	0
4,	55	1	9	40	5	0	0	0	1	40	10	4	0
5,	39	0	7	31	1	0	0	0	0	29	8	1	1
6,	35	0	11	21	1	1	1	0	0	17	11	4	3
7,	26	0	8	17	1	0	0	0	0	14	8	4	0
8,	20	0	8	10	2	0	0	0	0	5	6	8	1
9,	5	0	0	4	1	0	0	0	0	2	3	0	0
10,	2	0	0	2	0	0	0	0	0	2	0	0	0
11,	5	0	1	4	0	0	0	0	0	3	2	0	0
12,	1	0	0	1	0	0	0	0	0	1	0	0	0
Summary,	285	10	56	197	19	1	1	1	10	188	59	23	5

ADDITIONAL UPFOLLOW NOTES ON EX-PATIENTS OF THIS SERIES.

Sleeping Quarters.

Total,	251
Separate room,	186
Separate bed,	21
Sleeping tent,	0
Sleeping porch,	0
No data,	6
No precautions,	38

Condition of House.

Total,	251
Clean,	138
Fair,	79
Poor,	26
No data,	8

Reason for Discharge.

Total,	285
Consent,	224
Infraction of rules,	10
Deserted,	2
Other sanatoria,	0
Pay roll,	9
Against advice,	39
By request,	1

Symptoms.

Fever.	Night Sweats.	Hemorrhage.
70	30	6

UPFOLLOW REPORT OF DISCHARGED PATIENTS IN REGARD TO SUBSEQUENT DISPENSARY ATTENDANCE.

January 1 to July 1, 1915.

Dispensary.	Total.	No Attendance.	Total.	Attendance.	
				Regular.	Irregular.
Total,	251	79	172	136	36
Wilkes-Barre,	13	4	9	7	2
York,	1	0	1	1	0
Erie,	4	0	4	3	1
Carlisle,	1	0	1	1	0
Lebanon,	1	0	1	1	1
West Chester,	0	0	0	0	0
Bellefonte,	0	0	0	0	0
Emporium,	0	0	0	0	0
Johnstown,	14	5	9	7	2
Lewistown,	0	0	0	0	0
Chambersburg,	0	0	0	0	0
Chester,	0	0	0	0	0
Harrisburg,	16	8	8	7	1
Altoona,	2	1	1	1	0
Butler,	13	8	5	5	0
Berwick,	0	0	0	0	0
McConnellsburg,	0	0	0	0	0
Honesdale,	1	1	0	0	0
Milford,	0	0	0	0	0
Pittsburgh,	32	19	13	5	8
Philadelphia, 1630 Poplar Street,	54	1	53	53	0
Rochester,	1	0	1	0	1
Doylestown,	0	0	0	0	0
Kittanning,	9	5	4	2	2
New Bloomfield,	0	0	0	0	0
Mifflintown,	1	0	1	1	0
Coudersport,	0	0	0	0	0
Danville,	0	0	0	0	0
Mifflinburg,	0	0	0	0	0
Meyersdale,	3	2	1	1	0
Norristown,	0	0	0	0	0
Oil City,	0	0	0	0	0
Williamsport,	0	0	0	0	0
Tionesta,	0	0	0	0	0
New Castle,	0	0	0	0	0
Sharon,	1	0	1	1	0
Reading,	0	0	0	0	0
Bradford,	0	0	0	0	0
Lancaster,	0	0	0	0	0

UPFOLLOW REPORT OF DISCHARGED PATIENTS IN REGARD TO SUBSEQUENT DISPENSARY ATTENDANCE—Continued.

January 1 to July 1, 1915.

Dispensary.	Total.	No Attendance.	Total.	Attendance.	
				Regular.	Irregular.
Scranton,	0	0	0	0	0
Meadville,	0	0	0	0	0
Ridgway,	0	0	0	0	0
Clarion,	0	0	0	0	0
Towanda,	0	0	0	0	0
Mauch Chunk,	0	0	0	0	0
Lock Haven,	0	0	0	0	0
Huntingdon,	3	1	2	2	0
Indiana,	0	0	0	0	0
Montrose,	0	0	0	0	0
Selinsgrove,	0	0	0	0	0
Allentown,	0	0	0	0	0
Easton,	0	0	0	0	0
Shamokin,	0	0	0	0	0
Warren,	0	0	0	0	0
Monongahela,	1	1	0	0	0
Tunkhannock,	0	0	0	0	0
Greensburg,	5	2	3	3	0
Wellsboro,	0	0	0	0	0
Dushore,	0	0	0	0	0
Gettysburg,	0	0	0	0	0
Everett,	0	0	0	0	0
Clearfield,	6	2	4	2	2
Waynesburg,	0	0	0	0	0
Punxsutawney,	0	0	0	0	0
Stroudsburg,	0	0	0	0	0
Pottsville,	1	1	0	0	0
Uniontown,	0	0	0	0	0
Hazleton,	0	0	0	0	0
Hastings,	0	0	0	0	0
Connellsville,	0	0	0	0	0
Mt. Carmel,	0	0	0	0	0
Franklin,	6	0	6	4	2
Jenkintown,	0	0	0	0	0
Columbia,	0	0	0	0	0
Coatesville,	0	0	0	0	0
Phoenixvillle,	0	0	0	0	0
Mt. Pleasant,	0	0	0	0	0
Lykens,	0	0	0	0	0
Tyrone,	0	0	0	0	0
Philipsburg,	1	0	1	1	0
McKeesport,	0	0	0	0	0
Bristol,	1	0	1	0	1
Carbondale,	0	0	0	0	0
Shenandoah,	3	0	3	1	2
Hanover,	0	0	0	0	0
Bangor,	0	0	0	0	0
Monessen,	8	4	4	4	0
Lansford,	0	0	0	0	0
Titusville,	0	0	0	0	0
Tamaqua,	0	0	0	0	0
Milton,	0	0	0	0	0
Philadelphia, 1400 S. 24th Street,	6	2	4	3	1
Pittston,	0	0	0	0	0
DuBois,	6	2	4	2	2
West Fairview,	0	0	0	0	0
Susquehanna,	0	0	0	0	0
South Bethlehem,	0	0	0	0	0
Corry,	0	0	0	0	0
Homestead,	6	2	4	4	0
Braddock,	2	0	2	0	2
Brookville,	0	0	0	0	0
Beaver Falls,	0	0	0	0	0
Pottstown,	0	0	0	0	0
Washington,	3	0	3	1	2
Philadelphia, 1731 Orthodox Street,	2	1	1	1	0
Waynesboro,	0	0	0	0	0
Wilkinsburg,	21	6	15	10	5
Sunbury,	1	1	0	0	0
Tarentum,	0	0	0	0	0
Renovo,	0	0	0	0	0
Nanticoke,	0	0	0	0	0
Brownsville,	0	0	0	0	0
Kane,	2	0	2	2	0
Cresson,	0	0	0	0	0
Ardmore,	0	0	0	0	0

UPFOLLOW REPORT OF 351 PATIENTS PREVIOUSLY DISCHARGED FROM CRESSON SANATORIUM.

UPFOLLOW JULY 1, 1915, TO JANUARY 1, 1916.

Admitted as	Discharged as	Upfollowed as	Interval between Discharge and Last Upfollow.							
			Less than 6 Mos.	6-12 Mos.	12-18 Mos.	18-24 Mos.	24-30 Mos.	30-36 Mos.	36-42 Mos.	Over 42 Mos.	No data.
Incipient, 99= 28.0%	Cured, 1= 1.0%	Improved, 1	0	0	1	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Apparently Cured, 14= 14.2%	Improved, 13	0	1	4	5	3	0	0	0	0
		Stationary, 1	0	0	0	0	1	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Arrested, 60= 60.6%	Improved, 36	0	5	7	15	9	0	0	0	0
		Stationary, 12	0	7	2	2	1	0	0	0	0
		Progressive, 11	0	4	3	0	4	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 1	0	1	0	0	0	0	0	0	0
	Apparently Arrested, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Improved, 23= 23.2%	Improved, 12	0	4	4	2	1	1	0	0	0
		Stationary, 5	0	1	3	0	1	0	0	0	0
		Progressive, 5	0	3	1	1	0	0	0	0	0
		Died, tuberculosis, 1	0	0	0	0	0	1	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0

	Unimproved, 1= 1.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 1	0	0	1	0	0	0	0	0	0
	Cured, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Apparently Cured, 2= 1.2%	Improved, 1	0	0	0	1	0	0	0	0	0
		Stationary, 1	0	1	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Arrested, 78= 45.6%	Improved, 43	0	11	16	10	6	0	0	0	0
		Stationary, 17	0	8	3	1	5	0	0	0	0
		Progressive, 17	0	6	5	4	2	0	0	0	0
		Died, tuberculosis, 1	0	1	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
Moderately Advanced, 171= 48.9%	Apparently Arrested, 5= 2.9%	Improved, 3	0	3	0	0	0	0	0	0	0
		Stationary, 1	0	1	0	0	0	0	0	0	0
		Progressive, 1	0	1	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Improved, 77= 45.5%	Improved, 41	0	21	10	5	5	0	0	0	0
		Stationary, 14	0	4	6	3	1	0	0	0	0
		Progressive, 16	0	6	5	4	1	0	0	0	0
		Died, tuberculosis, 5	3	0	1	1	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 1	0	1	0	0	0	0	0	0	0
	Unimproved, 9= 5.3%	Improved, 2	0	2	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 5	0	1	1	1	2	0	0	0	0
		Died, tuberculosis, 2	2	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0

UPFOLLOW REPORT OF 351 PATIENTS PREVIOUSLY DISCHARGED FROM CRESSON SANATORIUM—Continued.

Admitted as	Discharged as	Upfollowed as	Interval between Discharge and Last Upfollow.							
			Less than 6 Mos.	6-12 Mos.	12-18 Mos.	18-24 Mos.	24-30 Mos.	30-36 Mos.	36-42 Mos.	Over 42 Mos.	No data.
Far Advanced, 81= 23.1%	Cured, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Apparently Cured, 0= 0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Arrested, 18= 22.2%	Improved, 10	0	1	1	4	4	0	0	0	0
		Stationary, 4	0	3	1	0	0	0	0	0	0
		Progressive, 1	0	0	0	0	1	0	0	0	0
		Died, tuberculosis, 2	0	1	1	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 1	0	1	0	0	0	0	0	0	0
	Apparently Arrested, 6= 7.4%	Improved, 3	0	3	0	0	0	0	0	0	0
		Stationary, 2	0	2	0	0	0	0	0	0	0
		Progressive, 1	0	1	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Improved, 39= 48.2%	Improved, 11	0	4	5	0	2	0	0	0	0
		Stationary, 12	0	5	3	1	3	0	0	0	0
		Progressive, 10	0	4	1	4	0	1	0	0	0
		Died, tuberculosis, 5	3	2	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 1	0	1	0	0	0	0	0	0	0

Unimproved, ---------- 18= 22.2%	Improved, ---------- 2	0	½	0	0	0	0	0	0	0	0
	Stationary, ---------- 1	0	0	1	0	0	0	0	0	0	0
	Progressive, ---------- 4	0	1	2	0	1	0	0	0	0	0
	Died, tuberculosis, ------ 11	8	2	1	0	0	0	0	0	0	0
	Died, other, ---------- 0	0	0	0	0	0	0	0	0	0	0
	No data, ---------- 0	0	0	0	0	0	0	0	0	0	0

Average Age.

Incipient, ----------	M.,	21.5 years.
	F.,	19.7 years.
Moderately Advanced, ------	M.,	30.1 years.
	F.,	25.6 years.
Far Advanced, ----------	M.,	33.1 years.
	F.,	31.7 years.

Average Hospital Attendance.

Incipient, ----------	M.,	151.2 days.
	F.,	186.4 days.
Moderately Advanced, ----	M.,	146.4 days.
	F.,	158.1 days.
Far Advanced, ----------	M.,	165.2 days.
	F.,	197.3 days.

Weight.

	Total.	No data.	Gain.	Loss.	Stationary.
Incipient, ----------	98	10	53	29	6
Moderately Advanced, --------	163	5	64	82	12
Far Advanced, ----------	63	4	24	28	7

Sputum.

	Total.	No data.	Not Examined.	Positive.	Negative.
Incipient, ----------	98	5	69	7	17
Moderately Advanced, --------	163	2	118	8	34
Far Advanced, ----------	63	2	45	8	8

UPFOLLOW JULY 1, 1915, TO JANUARY 1, 1916.

Admitted as	Discharged as	Upfollowed as
Incipient, .. 27= 28.1% *69= 71.9%*	Cured, ... 0= 0.0% *1= 1.4%*	Improved, ... 0 *1* Stationary, ... 0 *0* Progressive, ... 0 *0*
	Apparently Cured, .. 5= 18.5% *9= 13.0%*	Improved, ... 5 *8* Stationary, ... 0 *1* Progressive, ... 0 *0*
	Arrested, . 13= 42.2% *46= 66.7%*	Improved, ... 10 *26* Stationary, ... 0 *12* Progressive, ... 3 *8*
	Apparently Arrested, 0= 0.0% *0= 0.0%*	Improved, ... 0 *0* Stationary, ... 0 *0* Progressive, ... 0 *0*
	Improved, . 9= 33.3% *13= 18.8%*	Improved, ... 5 *7* Stationary, ... 1 *4* Progressive, ... 3 *2*
	Unimproved, 0= 0.0% *0= 0.0%*	Improved, ... 0 *0* Stationary, ... 0 *0* Progressive, ... 0 *0*
Moderately Advanced, 53= 32.7% *109= 67.3%*	Cured, ... 0= 0.0% *0= 0.0%*	Improved, ... 0 *0* Stationary, ... 0 *0* Progressive, ... 0 *0*
	Apparently Cured, .. 0= 0.0% *2= 1.8%*	Improved, ... 0 *1* Stationary, ... 0 *1* Progressive, ... 0 *0*
	Arrested, .. 23= 43.4% *54= 49.5%*	Improved, ... 10 *33* Stationary, ... 7 *10* Progressive, ... 6 *11*

UPFOLLOW JULY 1, 1915, TO JANUARY 1, 1916—Continued.

Admitted as	Discharged as	Upfollowed as
Far Advanced, 50= 49.2% *31= 50.8%*	Apparently Arrested, 0= 0.0% *5= 4.6%*	Improved, ... 0 *3* Stationary, ... 0 *1* Progressive, ... 0 *1*
	Improved, . 25= 47.2% *46= 42.2%*	Improved, ... 14 *27* Stationary, ... 7 *7* Progressive, ... 4 *12*
	Unimproved, 5= 9.4% *2= 1.8%*	Improved, ... 2 *0* Stationary, ... 0 *0* Progressive, ... 3 *2*
	Cured, ... 0= 0.0% *0= 0.0%*	Improved, ... 0 *0* Stationary, ... 0 *0* Progressive, ... 0 *0*
	Apparently Cured, .. 0= 0.0% *0= 0.0%*	Improved, ... 0 *0* Stationary, ... 0 *0* Progressive, ... 0 *0*
	Arrested, .. 2= 6.7% *13= 41.9%*	Improved, ... 2 *8* Stationary, ... 0 *4* Progressive, ... 0 *1*
	Apparently Arrested, 1= 3.3% *5= 16.1%*	Improved, ... 0 *3* Stationary, ... 1 *1* Progressive, ... 0 *1*
	Improved,. 21= 70.0% *12= 38.7%*	Improved, ... 6 *5* Stationary, ... 8 *4* Progressive, ... 7 *3*
	Unimproved 6= 20.0% *1= 3.2%*	Improved, ... 1 *1* Stationary, ... 1 *0* Progressive, ... 4 *0*

Cases in *italic* treated with Tubercle Bacilli Products (Tuberculin).

INCIDENCE OF TUBERCULOSIS IN FAMILIES OF 351 FORMER PATIENTS OF THE STATE SANATORIUM AT CRESSON AS TRACED THE LAST HALF OF 1915.

Number in Family Besides Patient.	Total.	Patients.											
		Classification According to Number of Tuberculous Adults in Family of Each.						Classification According to Number of Tuberculous Children in Family of Each.					
		No Data.	None.	1	2	3	4	No Data.	None.	1	2	3	4
Undetermined,	10	8	1	1	0	0	0	8	1	1	0	0	0
None,	0	0	0	0	0	0	0	0	0	0	0	0	0
1,	18	0	1	17	0	0	0	0	18	0	0	0	0
2,	35	0	3	25	7	0	0	0	30	5	0	0	0
3,	61	0	4	53	4	0	0	0	50	7	4	0	0
4,	69	1	13	49	6	0	0	1	50	10	8	0	0
5,	35	1	7	26	1	0	0	1	26	5	1	1	1
6,	31	1	6	16	7	1	0	1	16	7	6	1	0
7,	36	0	5	24	6	1	0	0	27	7	1	0	1
8,	30	0	9	15	4	1	1	0	10	13	6	1	0
9,	14	0	1	13	0	0	0	0	8	4	1	0	1
10,	7	0	3	4	0	0	0	0	3	1	1	1	1
11,	4	0	3	0	0	0	1	0	2	2	0	0	0
12,	1	0	1	0	0	0	0	0	0	0	0	0	1
Summary,	351	11	57	243	35	3	2	11	241	62	28	4	5

ADDITIONAL UPFOLLOW NOTES ON EX-PATIENTS OF THIS SERIES.

Sleeping Quarters.

Total,	324
Separate room,	242
Separate bed,	10
Sleeping tent,	0
Sleeping porch,	0
No data,	14
No precautions,	58

Condition of House.

Total,	324
Clean,	182
Fair,	108
Poor,	25
No data,	9

Reason for Discharge.

Total,	351
Consent,	275
Infraction of rules,	15
Deserted,	4
Other sanatoria,	0
Pay roll,	0
Against advice,	55
By request,	0
No data,	2

Symptoms.

Fever.	Night Sweats.	Hemorrhage.
76	39	16

UPFOLLOW REPORT OF DISCHARGED PATIENTS IN REGARD TO SUBSEQUENT DISPENSARY ATTENDANCE.

July 1, 1915 to January 1, 1916.

Dispensary.	Total.	No Attendance.	Attendance.		
			Total.	Regular.	Irregular.
Total,	351	137	214	137	77
Wilkes-Barre,	15	4	11	9	2
York,	1	0	1	1	0
Erie,	4	0	4	4	0
Carlisle,	1	0	1	1	0
Lebanon,	1	0	1	0	1
West Chester,	0	0	0	0	0
Bellefonte,	0	0	0	0	0
Emporium,	0	0	0	0	0
Johnstown,	28	9	19	11	8
Lewistown,	0	0	0	0	0
Chambersburg,	0	0	0	0	0
Chester,	1	0	1	0	1
Harrisburg,	15	7	8	3	5
Altoona,	5	0	5	3	2
Butler,	20	11	9	6	3
Berwick,	2	2	0	0	0
McConnellsburg,	0	0	0	0	0
Honesdale,	0	0	0	0	0
Milford,	0	0	0	0	0
Pittsburgh,	114	36	78	63	15
Philadelphia, 1630 Poplar Street,	4	2	2	1	1
Rochester,	0	0	0	0	0
Doylestown,	0	0	0	0	0
Kittanning,	14	7	7	2	5
New Bloomfield,	0	0	0	0	0
Mifflintown,	0	0	0	0	0
Coudersport,	0	0	0	0	0
Danville,	0	0	0	0	0
Mifflinburg,	0	0	0	0	0
Meyersdale,	8	6	2	1	1
Norristown,	0	0	0	0	0
Oil City,	0	0	0	0	0
Williamsport,	0	0	0	0	0
Tionesta,	0	0	0	0	0
New Castle,	0	0	0	0	0
Sharon,	0	0	0	0	0
Reading,	0	0	0	0	0
Bradford,	0	0	0	0	0
Lancaster,	1	0	1	0	1
Scranton,	5	4	1	0	1
Meadville,	0	0	0	0	0
Ridgway,	0	0	0	0	0
Clarion,	1	1	0	0	0

UPFOLLOW REPORT OF DISCHARGED PATIENTS IN REGARD TO SUBSEQUENT DISPENSARY ATTENDANCE—Continued.

Dispensary.	Total.	No Attendance.	Attendance.		
			Total.	Regular.	Irregular.
Towanda,	0	0	0	0	0
Mauch Chunk,	0	0	0	0	0
Lock Haven,	0	0	0	0	0
Huntingdon,	5	2	3	2	1
Indiana,	4	4	0	0	0
Montrose,	0	0	0	0	0
Selinsgrove,	0	0	0	0	0
Allentown,	2	0	2	1	1
Easton,	0	0	0	0	0
Shamokin,	0	0	0	0	0
Warren,	0	0	0	0	0
Monongahela,	3	2	1	0	1
Tunkhannock,	0	0	0	0	0
Greensburg,	2	2	0	0	0
Wellsboro,	0	0	0	0	0
Dushore,	0	0	0	0	0
Gettysburg,	0	0	0	0	0
Everett,	3	1	2	2	0
Clearfield,	4	0	4	2	2
Waynesburg,	0	0	0	0	0
Punxsutawney,	1	1	0	0	0
Stroudsburg,	1	1	0	0	0
Pottsville,	0	0	0	0	0
Uniontown,	0	0	0	0	0
Hazleton,	0	0	0	0	0
Hastings,	4	3	1	0	1
Connellsville,	0	0	0	0	0
Mt. Carmel,	0	0	0	0	0
Franklin,	2	0	2	0	2
Jenkintown,	0	0	0	0	0
Columbia,	0	0	0	0	0
Coatesville,	0	0	0	0	0
Phoenixville,	0	0	0	0	0
Mt. Pleasant,	0	0	0	0	0
Lykens,	0	0	0	0	0
Tyrone,	0	0	0	0	0
Philipsburg,	1	0	1	0	1
McKeesport,	3	0	3	1	2
Bristol,	0	0	0	0	0
Carbondale,	0	0	0	0	0
Shenandoah,	2	0	2	0	2
Hanover,	0	0	0	0	0
Bangor,	0	0	0	0	0
Monessen,	7	6	1	0	1
Lansford,	0	0	0	0	0
Titusville,	0	0	0	0	0
Tamaqua,	0	0	0	0	0
Milton,	0	0	0	0	0
Philadelphia, 1400 South 24th Street,	8	3	5	3	2
Pittston,	1	0	1	1	0
DuBois,	4	1	3	2	1
West Fairview,	0	0	0	0	0
Susquehanna,	0	0	0	0	0
South Bethlehem,	0	0	0	0	0
Corry,	0	0	0	0	0
Homestead,	6	1	5	3	2
Braddock,	5	2	3	1	2
Brookville,	1	0	1	1	0
Beaver Falls,	1	1	0	0	0
Washington,	5	2	3	0	3
Pottstown,	0	0	0	0	0
Philadelphia, 1731 Orthodox Street,	2	1	1	0	1
Waynesboro,	0	0	0	0	0
Wilkinsburg,	28	13	15	10	5
Sunbury,	1	1	0	0	0
Tarentum,	4	0	4	3	1
Renovo,	0	0	0	0	0
Nanticoke,	0	0	0	0	0
Brownsville,	0	0	0	0	0
Kane,	1	1	0	0	0
Cresson,	0	0	0	0	0
Ardmore,	0	0	0	0	0

UPFOLLOW JANUARY 1 TO JULY 1, 1915, OF FORMER PATIENTS OF CRESSON SANATORIUM GROUPED ACCORDING TO ORIGINAL ADMISSION CLASSIFICATION AND SEX, COLOR, SOCIAL CONDITION AND AGE, AND A COMPARISON OF OCCUPATION AND INCOME BEFORE ADMISSION AND AS UPFOLLOWED.

INCIPIENT—89 CASES.

Sex.

30 ..... Male.
59 ..... Female.

Color.

Male.		Female.	
0	Black.	2	Black.
30	White.	57	White.
30	Total.	59	Total.

Social Condition.

19	Single.	49	Single.
10	Married.	4	Married.
1	Widowed.	5	Widowed.
0	Divorced.	1	Divorced.
0	Separated.	0	Separated.
30	Total.	59	Total.

Age Incident.

Male.			Female.		
5- 9 years,		2	5- 9 years,		9
10-14 years,		11	10-14 years,		13
15-19 years,		4	15-19 years,		16
20-29 years,		2	20-29 years,		11
30-39 years,		3	30-39 years,		8
40-49 years,		3	40-49 years,		3
50-59 years,		3	50-59 years,		0
60-69 years,		1	60-69 years,		0
Total,		29	Total,		60

Average Age.

Male, ... 25 years.
Female ..... 18.8 years.

MODERATELY ADVANCED—123 CASES.

Sex.

45 ..... Male.
78 ..... Female.

Color.

Male.		Female.	
1	Black.	3	Black.
44	White.	75	White.
45	Total.	78	Total.

Social Condition.

25	Single.	48	Single.
20	Married.	19	Married
0	Widowered.	7	Widowed.
0	Divorced.	3	Divorced.
0	Separated.	1	Separated.
45	Total.	78	Total.

Age Incident.

Male.		Female.	
5- 9 years,	2	5- 9 years,	1
10-14 years,	5	10-14 years,	8
15-19 years,	6	15-19 years,	10
20-29 years,	8	20-29 years,	28
30-39 years,	9	30-39 years,	18
40-49 years,	9	40-49 years,	7
50-59 years,	2	50-59 years,	3
60-69 years,	4	60-69 years,	3
Total,	45	Total,	78

Average Age.

Male, ... 31.9 years.
Female, ... 30.3 years.

FAR ADVANCED—73 CASES.

Sex.

34..... Male.
39..... Female.

Color.

Male.		Female.	
0	Black.	0	Black.
34	White.	39	White.
34	Total.	39	Total

Social Condition.

11	Single.	12	Single.
16	Married.	22	Married.
5	Widowered	4	Widowed.
0	Divorced.	0	Divorced.
2	Separated.	1	Separated.
34	Total.	39	Total.

Age Incident.

Male.		Female.	
5- 9 years,	0	5- 9 years,	1
10-14 years,	2	10-14 years,	4
15-19 years,	1	15-19 years,	3
20-29 years,	12	20-29 years,	10
30-39 years,	10	30-39 years,	13
40-49 years,	6	40-49 years,	5
50-59 years,	2	50-59 years,	2
60-69 years,	1	60-69 years,	1
Total,	34	Total,	39

Average Age.

Male, ... 32.5 years.
Female, ... 30.3 years.

OCCUPATIONS AND WEEKLY INCOME.

Incipient Males, ...	29	Original.
Under occupational age, ...	14	
No occupation, ...	4	

Of the 4 cases with no original occupation, none were occupied on admission to the sanatorium and 2 are occupied at present.

Total occupied on admission, ...	7
Average weekly income of 6 cases, ...	$19 67

There were 8 cases with no occupation on admission to the sanatorium; of these 4 were reported as occupied at present and 4 unoccupied.

There were 7 cases with occupations on admission to the sanatorium; of those all are occupied at present.

Total occupied at present, ...	11
Average weekly income of 10 cases, ...	$13 50

Incipient Females, ...	58	Original.
Under occupational age, ...	21	
No occupation, ...	14	

Of the 14 cases with no original occupation, none were occupied on admission to the sanatorium and 2 are occupied at present.

Total occupied on admission, ...	18
Average weekly income of 12 cases, ...	$5 00
Housewives, ...	6

There were 19 cases with no occupation on admission to the sanatorium; of these 6 were reported as occupied at present.

There were 18 cases with occupations on admission to the sanatorium; of these 12 were reported as occupied at present, 5 as unoccupied, no data on one.

Total occupied at present, ...	18
Average weekly income of 14 cases, ...	$5 21
Housewives, ...	3

Moderately Advanced Males, ...	40	Original.
Under occupational age, ...	8	
No occupation, ...	4	

Of the 4 cases with no original occupation, none were occupied on admission to the sanatorium and one at present.

Total occupied on admission, ...	15
Average weekly income of 15 cases, ...	$15 46

There were 17 cases with no occupation on admission to the sanatorium; of these 6 were reported as occupied at present.

There were 15 cases with occupations on admission to the sanatorium; of these 9 were reported as occupied at present and 6 as unoccupied.

Total occupied at present,		15
Average weekly income of 15 cases,		$12 93
Moderately Advanced Females,	75	
Under occupational age,	9	Original.
No occupation,	16	

Of the 16 cases with no original occupation, one was occupied on admission to the sanatorium and 5 at present.

Total occupied on admission,	37
Average weekly income of 15 cases,	$6 93
Housewives,	20

There were 29 cases with no occupation on admission to the sanatorium; of these 9 were reported as occupied at present.

There were 37 cases occupied on admission to the sanatorium; of these 31 were reported as occupied at present, 4 as unoccupied and 2 no data.

Total occupied at present,		40
Average weekly income of 20 cases,		$5 05
Housewives,		18
Far Advanced Males,	24	
Under occupational age,	2	Original.
No occupation,	0	
Total occupied on admission,		5
Average weekly income of 5 cases,		$10 80

There were 17 cases with no occupation on admission to the sanatorium; of these 3 were reported as occupied at present, 11 as unoccupied and no data 3.

There were 5 cases with occupations on admission to the sanatorium; of these 1 was reported as occupied at present and 4 as unoccupied.

Total occupied at present,		4
Average weekly income of 2 cases,		$10 50
Far Advanced Females,	25	
Under occupational age,	4	Original.
No occupation,	1	

One case with no original occupation, unoccupied before admission and at present.

Total occupied on admission,	16
Average weekly income of one case,	$6 00
Housewives,	14

There were 5 cases with no occupation on admission to the sanatorium; of these one was reported as occupied at present and 4 as unoccupied.

There were 16 cases with occupations on admission to the sanatorium; of these 15 were reported as occupied and one as unoccupied.

Total occupied at present,	16
Average weekly income of 2 cases,	No data
Housewives,	14

UPFOLLOW JULY 1, 1915, TO JANUARY 1, 1916.

(Continuation of preceding table.)

INCIPIENT—99 CASES.

Sex.

44	Male.
55	Female.

Color.

Male.		Female.	
0	Black.	1	Black.
44	White.	54	White.
44	Total.	55	Total.

Social Condition.

31	Single.	46	Single.
13	Married.	5	Married.
0	Widowered.	2	Widowed.
0	Divorced.	2	Divorced.
0	Separated.	0	Separated.
44	Total.	55	Total.

Age Incident.

5- 9 years,	4		5- 9 years,		5
10-14 years,	12		10-14 years,		16
15-19 years,	9		15-19 years,		11
20-29 years,	9		20-29 years,		16
30-39 years,	6		30-39 years,		5
40-49 years,	2		40-49 years,		1
50-59 years,	2		50-59 years,		1
60-69 years,	0		60-69 years,		0
Total,	44		Total,		55

Average Age.

Male,	21.5 years.
Female,	19.7 years.

MODERATELY ADVANCED—171 CASES.

Sex.

69	Male.
102	Female.

Color.

Male.		Female.	
2	Black.	3	Black.
67	White.	99	White.
69	Total.	102	Total.

Social Condition.

35	Single.	62	Single.
32	Married.	33	Married.
2	Widowered.	6	Widowed.
0	Divorced.	1	Divorced.
0	Separated.	0	Separated.
69	Total.	102	Total.

Age Incident.

5- 9 years,	1	5- 9 years,	1
10-14 years,	9	10-14 years,	8
15-19 years,	10	15-19 years,	21
20-29 years,	15	20-29 years,	37
30-39 years,	18	30-39 years,	22
40-49 years,	8	40-49 years,	8
50-59 years,	5	50-59 years,	2
60-69 years,	3	60-69 years,	3
Total,	69	Total,	102

Average Age.

Male,	30.1 years.
Female,	25.6 years.

FAR ADVANCED—81 CASES.

Sex.

42	Male.
39	Female.

Color.

Male.		Female.	
1	Black.	0	Black.
41	White.	39	White.
42	Total.	39	Total.

Social Condition.

15	Single.	15	Single.
23	Married.	18	Married.
4	Widowered.	5	Widowed.
0	Divorced.	0	Divorced.
0	Separated.	1	Separated.
42	Total.	39	Total.

Age Incident.

5- 9 years,	1	5- 9 years,	0
10-14 years,	1	10-14 years,	3
15-19 years,	2	15-19 years,	3
20-29 years,	13	20-29 years,	15
30-39 years,	13	30-39 years,	9
40-49 years,	7	40-49 years,	5
50-59 years,	3	50-59 years,	2
60-69 years,	2	60-69 years,	2
Total,	42	Total,	39

Average Age.

Male, ... 33.1 years
Female, ... 31.7 years.

OCCUPATIONS AND WEEKLY INCOME.

Incipient Males, ...	43	
Under occupational age, ...	15	Original.
No occupation, ...	9	

Of the 9 cases with no original occupation, one was occupied on admission to the sanatorium and 4 are occupied at present.

Total occupied on admission, ...		7
Average weekly income of 7 cases, ...	$15	85

There were 21 cases with no occupation on admission to the sanatorium; of these 10 were reported as occupied, 10 as unoccupied and no data on one.

There were 7 cases with occupations on admission to the sanatorium; 5 were reported as occupied and 2 as unoccupied.

Total occupied at present, ...			15
Average weekly income of 12 cases, ...		$12	16
Incipient Females, ...	55		
Under occupational age, ...	21	Original.	
No occupation, ...	14		

Of the 14 cases with no original occupation, none were occupied on admission to the sanatorium and 3 are occupied at present.

Total occupied on admission, ...		16
Average weekly income of 9 cases, ...	$7	11
Housewives, ...		6

There were 18 cases with no occcupation on admission to the sanatorium; of these 5 were reported as occupied at present, 12 as unoccupied and no data on one.

There were 16 cases with occupations on admission to the sanatorium; of these 11 were reported as occupied at present and 5 as unoccupied.

Total occupied at present, ...			16
Average weekly income of 9 cases, ...		$5	33
Housewives, ...			7
Moderately Advanced Males, ...	66		
Under occupational age, ...	10	Original.	
No occupation, ...	4		

There were 4 cases with no original occupation; of these none were occupied on admission to the sanatorium and 2 are occupied at present.

Total occupied on admission, ...		25
Average weekly income of 22 cases, ...	$13	45

There were 31 cases with no occupation on admission to the sanatorium; of these 11 were reported as occupied, 19 as unoccupied and no data on one.

There were 25 cases with occupations on admission to the sanatorium; of these 17 were reported as occupied and 8 as unoccupied.

Total occupied at present,		28
Average weekly income of 26 cases,		$12 72
Moderately Advanced Females,	97	
Under occupational age,	8	Original.
No occupation,	21	

Of the 21 cases with no original occupation, one was occupied on admission to the sanatorium and 7 are occupied at present.

Total occupied on admission,	51
Average weekly income of 18 cases,	$2 27
Housewives,	31

There were 38 cases with no occupation before admission to the sanatorium; of these 15 were reported as occupied at present, 22 unoccupied and no data on one.

There were 51 cases with occupations on admission to the sanatorium; of these 44 were reported as occupied at present and 7 as unoccupied.

Total occupied at present,		59
Average weekly income of 10 cases,		$5 70
Housewives,		31
Far Advanced Males,	29	
Under occupational age,	2	Original.
No occupation,	1	

The one case with no original occupation was not occupied on admission to the sanatorium nor at present.

Total occupied on admission,	12
Average weekly income of 11 cases,	$18 09

There were 15 cases with no occupation on admission to the sanatorium; of these 6 were reported as occupied and 9 as unoccupied.

There were 12 cases with occupations on admission to the sanatorium; of these 7 were occupied at present, 4 as unoccupied and no data on one.

Total occupied at present,		13
Average weekly income of 11 cases,		$10 45
Far advanced Females,	34	
Under occupational age,	2	Original.
No occupation,	6	

Of the 6 cases with no original occupation, of these none were occupied on admission to the sanatorium and none are occupied at present.

Total occupied on admission,	20
Average weekly income of 5 cases,	$6 20
Housewives,	15

There were 12 cases with no occupation on admission to the sanatorium; of these none were reported as occupied.

There were 20 cases with occupations on admission to sanatorium; of these 16 were reported as occupied at present, 3 as unoccupied and no data on one.

Total occupied at present,	16
Average weekly income of 1 case,	$5 00
Housewives,	14

UPFOLLOW REPORT OF 173 PATIENTS PREVIOUSLY DISCHARGED FROM HAMBURG SANATORIUM.

UPFOLLOW JULY 1, 1915, TO JANUARY 1, 1916.

Admitted as	Discharged as	Upfollowed as		Interval between Discharge and Last Upfollow.								
				Less than 6 Mos.	6-12 Mos.	12-18 Mos.	18-24 Mos.	24-30 Mos.	30-36 Mos.	36-42 Mos.	Over 42 Mos.	No Data.
Incipient, 5=2.9%	Cured, 0=0.0%	Improved,	0	0	0	0	0	0	0	0	0	0
		Stationary,	0	0	0	0	0	0	0	0	0	0
		Progressive,	0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis,	0	0	0	0	0	0	0	0	0	0
		Died, other,	0	0	0	0	0	0	0	0	0	0
		No data,	0	0	0	0	0	0	0	0	0	0
	Apparently Cured, 0=0.0%	Improved,	0	0	0	0	0	0	0	0	0	0
		Stationary,	0	0	0	0	0	0	0	0	0	0
		Progressive,	0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis,	0	0	0	0	0	0	0	0	0	0
		Died, other,	0	0	0	0	0	0	0	0	0	0
		No data,	0	0	0	0	0	0	0	0	0	0
	Arrested, 0=0.0%	Improved,	0	0	0	0	0	0	0	0	0	0
		Stationary,	0	0	0	0	0	0	0	0	0	0
		Progressive,	0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis,	0	0	0	0	0	0	0	0	0	0
		Died, other,	0	0	0	0	0	0	0	0	0	0
		No data,	0	0	0	0	0	0	0	0	0	0
	Apparently Arrested, 0=0.0%	Improved,	0	0	0	0	0	0	0	0	0	0
		Stationary,	0	0	0	0	0	0	0	0	0	0
		Progressive,	0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis,	0	0	0	0	0	0	0	0	0	0
		Died, other,	0	0	0	0	0	0	0	0	0	0
		No data,	0	0	0	0	0	0	0	0	0	0
	Improved, 4=80.0%	Improved,	3	0	3	0	0	0	0	0	0	0
		Stationary,	1	0	1	0	0	0	0	0	0	0
		Progressive,	0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis,	0	0	0	0	0	0	0	0	0	0
		Died, other,	0	0	0	0	0	0	0	0	0	0
		No data,	0	0	0	0	0	0	0	0	0	0

Moderately Advanced, -- 65= 0.0%	Unimproved, ---------- 1=20.0%	Improved, ----------	0	0	0	0	0	0	0	0	0	0
		Stationary, ----------	0	0	0	0	0	0	0	0	0	0
		Progressive, ----------	1	0	1	0	0	0	0	0	0	0
		Died, tuberculosis, -----	0	0	0	0	0	0	0	0	0	0
		Died, other, ----------	0	0	0	0	0	0	0	0	0	0
		No data, ----------	0	0	0	0	0	0	0	0	0	0
	Cured, ---------- 0= 0.0%	Improved, ----------	0	0	0	0	0	0	0	0	0	0
		Stationary, ----------	0	0	0	0	0	0	0	0	0	0
		Progressive, ----------	0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, -----	0	0	0	0	0	0	0	0	0	0
		Died, other, ----------	0	0	0	0	0	0	0	0	0	0
		No data, ----------	0	0	0	0	0	0	0	0	0	0
	Apparently Cured, ------ 0= 0.0%	Improved, ----------	0	0	0	0	0	0	0	0	0	0
		Stationary, ----------	0	0	0	0	0	0	0	0	0	0
		Progressive, ----------	0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, -----	0	0	0	0	0	0	0	0	0	0
		Died, other, ----------	0	0	0	0	0	0	0	0	0	0
		No data, ----------	0	0	0	0	0	0	0	0	0	0
	Arrested, ---------- 10=15.4%	Improved, ----------	5	0	5	0	0	0	0	0	0	0
		Stationary, ----------	3	0	3	0	0	0	0	0	0	0
		Progressive, ----------	2	0	2	0	0	0	0	0	0	0
		Died, tuberculosis, -----	0	0	0	0	0	0	0	0	0	0
		Died, other, ----------	0	0	0	0	0	0	0	0	0	0
		No data, ----------	0	0	0	0	0	0	0	0	0	0
	Apparently Arrested, --- 0= 0.0%	Improved, ----------	0	0	0	0	0	0	0	0	0	0
		Stationary, ----------	0	0	0	0	0	0	0	0	0	0
		Progressive, ----------	0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, -----	0	0	0	0	0	0	0	0	0	0
		Died, other, ----------	0	0	0	0	0	0	0	0	0	0
		No data, ----------	0	0	0	0	0	0	0	0	0	0
	Improved, ---------- 42=64.6%	Improved, ----------	14	0	14	0	0	0	0	0	0	0
		Stationary, ----------	13	0	12	1	0	0	0	0	0	0
		Progressive, ----------	13	0	13	0	0	0	0	0	0	0
		Died, tuberculosis, -----	2	0	2	0	0	0	0	0	0	0
		Died, other, ----------	0	0	0	0	0	0	0	0	0	0
		No data, ----------	0	0	0	0	0	0	0	0	0	0
	Unimproved, ---------- 13=20.0%	Improved, ----------	3	0	3	0	0	0	0	0	0	0
		Stationary, ----------	3	0	3	0	0	0	0	0	0	0
		Progressive, ----------	3	0	3	0	0	0	0	0	0	0
		Died, tuberculosis, -----	4	4	0	0	0	0	0	0	0	0
		Died, other, ----------	0	0	0	0	0	0	0	0	0	0
		No data, ----------	0	0	0	0	0	0	0	0	0	0

UPFOLLOW REPORT OF 173 PATIENTS PREVIOUSLY DISCHARGED FROM HAMBURG SANATORIUM—Continued.

UPFOLLOW JULY 1, 1915, TO JANUARY 1, 1916.

Admitted as	Discharged as	Upfollowed as	Interval between Discharge and Last Upfollow.								
			Less than 6 Mos.	6-12 Mos.	12-18 Mos.	18-24 Mos.	24-30 Mos.	30-36 Mos.	36-42 Mos.	Over 42 Mos.	No Data.
Far Advanced, 103=50.5%	Cured, 0=0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Apparently Cured, 0=0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Arrested, 1=1.0%	Improved, 1	0	1	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Apparently Arrested, 0=0.0%	Improved, 0	0	0	0	0	0	0	0	0	0
		Stationary, 0	0	0	0	0	0	0	0	0	0
		Progressive, 0	0	0	0	0	0	0	0	0	0
		Died, tuberculosis, 0	0	0	0	0	0	0	0	0	0
		Died, other, 0	0	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0
	Improved, 49=47.5%	Improved, 6	0	6	0	0	0	0	0	0	0
		Stationary, 15	0	15	0	0	0	0	0	0	0
		Progressive, 11	0	11	0	0	0	0	0	0	0
		Died, tuberculosis, 16	5	11	0	0	0	0	0	0	0
		Died, other, 1	1	0	0	0	0	0	0	0	0
		No data, 0	0	0	0	0	0	0	0	0	0

Unimproved, ----------	58=51.4%	Improved, ----------	3	0	3	0	0	0	0	0	0	0
		Stationary, ----------	1	0	1	0	0	0	0	0	0	0
		Progressive, ----------	5	0	5	0	0	0	0	0	0	0
		Died, tuberculosis, -----	43	40	3	0	0	0	0	0	0	0
		Died, other, ----------	0	0	0	0	0	0	0	0	0	0
		No data, ----------	1	0	1	0	0	0	0	0	0	0

Average Age.

Incipient, ----------	M.,	34.3 years
	F.,	23.0 years
Moderately Advanced, -----	M.,	31.9 years
	F.,	30.3 years
Far Advanced, ----------	M.,	33.4 years
	F.,	30.9 years

Average Hospital Attendance.

Incipient, ----------	M.,	95.2 days
	F.,	90.0 days
Moderately Advanced, ----	M.,	116.6 days
	F.,	134.1 days
Far Advanced, ----------	M.,	87.4 days
	F.,	80.0 days

Weight.

	Total.	No Data.	Gain.	Loss.	Stationary.
Incipient, ----------	5	0	2	0	3
Moderately Advanced, --------	59	2	21	31	5
Far Advanced, ----------	43	5	10	25	3

Sputum.

	Total.	No Data.	Not Examined.	Positive.	Negative.
Incipient, ----------	5	0	1	0	4
Moderately Advanced, --------	59	0	31	11	17
Far Advanced, ----------	43	1	20	17	5

UPFOLLOW JULY 1, 1915, TO JANUARY 1, 1916.

Admitted as		Discharged as		Upfollowed as	
Incipient, ..	5=100.0% *0= 0.0%*	Improved, .	4= 80.0% *0= 0.0%*	Improved, ...	3 *0*
				Stationary, ...	1 *0*
				Progressive, ...	0 *0*
		Unimproved,	1= 20.0% *0= 0.0%*	Improved, ...	0 *0*
				Stationary, ...	0 *0*
				Progressive, ...	1 *0*
Moderately Advanced,	50= 84.7% *9= 15.3%*	Arrested, ..	8= 16.0% *2= 22.2%*	Improved, ...	4 *1*
				Stationary, ...	3 *0*
				Progressive, ...	1 *1*
		Improved, .	35= 70.0% *5= 55.6%*	Improved, ...	11 *3*
				Stationary, ...	12 *1*
				Progressive, ...	12 *1*
		Unimproved	7= 14.0% *2= 22.2%*	Improved, ...	2 *1*
				Stationary, ...	2 *1*
				Progressive, ...	3 *0*
Far Advanced	39= 92.9% *3= 7.1%*	Arrested, ..	1= 2.6% *0= 0.0%*	Improved, ...	1 *0*
				Stationary, ...	0 *0*
				Progressive, ...	0 *0*
		Improved, .	29= 74.3% *3=100.0%*	Improved, ...	5 *1*
				Stationary, ...	14 *1*
				Progressive, ...	10 *1*
		Unimproved,	9= 23.1% *0= 0.0%*	Improved, ...	3 *0*
				Stationary, ...	1 *0*
				Progressive, ...	5 *0*

Cases in *italic* treated with the Tubercle Bacilli Products (Tuberculin).

INCIDENCE OF TUBERCULOSIS IN FAMILIES OF 173 FORMER PATIENTS OF THE STATE SANATORIUM AT HAMBURG AS TRACED THE LAST HALF OF 1915.

Number in Family Besides Patient.	Total.	Patients.											
		Classification According to Number of Tuberculous Adults in Family of Each.						Classification According to Number of Tuberculous Children in Family of Each.					
		No Data.	None.	1	2	3	4	No Data.	None.	1	2	3	4
Undetermined,	4	4	0	0	0	0	0	4	0	0	0	0	0
1,	21	0	10	11	0	0	0	0	21	0	0	0	0
2,	18	0	7	10	1	0	0	0	17	1	0	0	0
3,	36	0	10	26	0	0	0	0	35	1	0	0	0
4,	25	0	3	20	2	0	0	0	25	0	0	0	0
5,	24	0	7	16	1	0	0	0	20	1	3	0	0
6,	19	0	4	14	1	0	0	0	16	2	1	0	0
7,	13	0	2	11	0	0	0	0	12	1	0	0	0
8,	4	0	0	3	1	0	0	0	2	1	0	1	0
9,	9	0	1	7	1	0	0	0	8	0	0	1	0
Summary,	173	4	44	118	7	0	0	4	156	7	4	2	0

ADDITIONAL UPFOLLOW NOTES ON EX-PATIENTS OF THIS SERIES.

Sleeping Quarters.

Total,	107
Separate room,	77
Separate bed,	3
Sleeping tent,	0
Sleeping porch,	0
No precautions,	22
No data,	5

Condition of House.

Total,	107
Clean,	58
Fair,	40
Poor,	7
No data,	2

Reason for Discharge.

Total,	173
Voluntary,	77
Dismissed,	3
Deserted,	9
Other sanatoria,	0
Pay roll,	0
Against advice,	84
By request,	0

Symptoms.

Fever.	Night Sweats.	Hemorrhage.
36	23	13

UPFOLLOW REPORT OF DISCHARGED PATIENTS IN REGARD TO SUBSEQUENT DISPENSARY ATTENDANCE.

July 1, 1915, to January 1, 1916.

Dispensary.	Total.	No Attendance.	Attendance.		
			Total.	Regular.	Irregular.
Total,	107	63	44	28	16
Wilkes-Barre,	3	1	2	1	1
York,	1	0	1	0	1
Erie,	0	0	0	0	0
Carlisle,	0	0	0	0	0
Lebanon,	2	0	2	2	0
West Chester,	0	0	0	0	0
Bellefonte,	0	0	0	0	0
Emporium,	0	0	0	0	0
Johnstown,	2	1	1	1	0
Lewistown,	0	0	0	0	0
Chambersburg,	0	0	0	0	0
Chester,	4	3	1	1	0
Harrisburg,	5	3	2	2	0
Altoona,	0	0	0	0	0
Butler,	0	0	0	0	0
Berwick,	0	0	0	0	0
McConnellsburg,	0	0	0	0	0
Honesdale,	0	0	0	0	0
Milford,	0	0	0	0	0
Pittsburgh,	6	1	5	4	1
Philadelphia, 1630 Poplar Street,	36	33	3	0	3
Rochester,	0	0	0	0	0
Doylestown,	0	0	0	0	0
Kittanning,	1	1	0	0	0
New Bloomfield,	0	0	0	0	0
Mifflintown,	1	0	1	0	1
Coudersport,	0	0	0	0	0
Danville,	0	0	0	0	0
Mifflinburg,	0	0	0	0	0
Meyersdale,	0	0	0	0	0
Norristown,	0	0	0	0	0
Oil City,	0	0	0	0	0
Williamsport,	0	0	0	0	0
Tionesta,	0	0	0	0	0
New Castle,	0	0	0	0	0
Sharon,	0	0	0	0	0
Reading,	0	0	0	0	0
Bradford,	0	0	0	0	0
Lancaster,	0	0	0	0	0
Scranton,	4	2	2	0	2
Meadville,	0	0	0	0	0

UPFOLLOW REPORT OF DISCHARGED PATIENTS IN REGARD TO SUBSEQUENT DISPENSARY ATTENDANCE.—Continued.

July 1, 1915, to January 1, 1916.

Dispensary.	Total.	No Attendance.	Attendance.		
			Total.	Regular.	Irregular.
Ridgway,	0	0	0	0	0
Clarion,	0	0	0	0	0
Towanda,	0	0	0	0	0
Mauch Chunk,	0	0	0	0	0
Lock Haven,	0	0	0	0	0
Huntingdon,	1	0	0	0	0
Indiana,	0	0	1	1	0
Montrose,	0	0	0	0	0
Selinsgrove,	0	0	0	0	0
Allentown,	3	2	1	0	1
Easton,	2	0	2	2	0
Shamokin,	0	0	0	0	0
Warren,	0	0	0	0	0
Monongahela,	0	0	0	0	0
Tunkhannock,	0	0	0	0	0
Greensburg,	0	0	0	0	0
Wellsboro,	0	0	0	0	0
Dushore,	0	0	0	0	0
Gettysburg,	0	0	0	0	0
Everett,	0	0	0	0	0
Clearfield,	0	0	0	0	0
Waynesburg,	0	0	0	0	0
Punxsutawney,	0	0	0	0	0
Stroudsburg,	0	0	0	0	0
Pottsville,	0	0	0	0	0
Uniontown,	0	0	0	0	0
Hazleton,	2	2	0	0	0
Hastings,	0	0	0	0	0
Connellsville,	0	0	0	0	0
Mt. Carmel,	2	2	0	0	0
Franklin,	0	0	0	0	0
Jenkintown,	0	0	0	0	0
Columbia,	0	0	0	0	0
Coatesville,	0	0	0	0	0
Phoenixville,	0	0	0	0	0
Mt. Pleasant,	0	0	0	0	0
Lykens,	0	0	0	0	0
Tyrone,	0	0	0	0	0
Philipsburg,	0	0	0	0	0
McKeesport,	1	1	0	0	0
Bristol,	0	0	0	0	0
Carbondale,	0	0	0	0	0
Shenandoah,	0	0	0	0	0
Hanover,	0	0	0	0	0
Bangor,	0	0	0	0	0
Monessen,	0	0	0	0	0
Lansford,	0	0	0	0	0
Titusville,	0	0	0	0	0
Tamaqua,	0	0	0	0	0
Milton,	1	0	1	0	1
Philadelphia, 1400 South 24th Street,	13	6	7	5	2
Pittston,	1	0	1	1	0
DuBois,	0	0	0	0	0
West Failview,	0	0	0	0	0
Susquehanna,	0	0	0	0	0
South Bethlehem,	3	1	2	0	2
Corry,	0	0	0	0	0
Homestead,	3	1	2	1	1
Braddock,	1	0	1	1	0
Brookville,	0	0	0	0	0
Beaver Falls,	0	0	0	0	0
Washington,	1	0	1	1	0
Pottstown,	0	0	0	0	0
Philadelphia, 1731 Orthodox Street,	7	2	5	5	0
Waynesboro,	0	0	0	0	0
Wilkinsburg,	1	1	0	0	0
Sunbury,	0	0	0	0	0
Tarentum,	0	0	0	0	0
Renovo,	0	0	0	0	0
Nanticoke,	0	0	0	0	0
Brownsville,	0	0	0	0	0
Kane,	0	0	0	0	0
Cresson,	0	0	0	0	0
Ardmore,	0	0	0	0	0

UPFOLLOW JULY 1, 1915, TO JANUARY 1, 1916, OF FORMER PATIENTS OF HAMBURG SANATORIUM GROUPED ACCORDING TO ORIGINAL ADMISSION CLASSIFICATION AND BY SEX, COLOR, SOCIAL CONDITION AND AGE, AND A COMPARISON OF OCCUPATION AND INCOME BEFORE ADMISSION AND AS UPFOLLOWED.

INCIPIENT—5 CASES.

Sex.

4	Male.
1	Female.

Color.

Male.		Female.	
0	Black.	0	Black.
4	White.	1	White.
4	Total.	1	Total.

Social Condition.

1	Single.	0	Single.
3	Married.	1	Married.
0	Widowered.	0	Widowed.
0	Divorced.	0	Divorced.
0	Separated.	0	Separated.
4	Total.	1	Total.

Age Incident.

5- 9	years,	0	5- 9	years,	0
10-14	years,	0	10-14	years,	0
15-19	years,	0	15-19	years,	0
20-29	years,	1	20-29	years,	1
30-39	years,	2	30-39	years,	0
40-49	years,	1	40-49	years,	0
50-59	years,	0	50-59	years,	0
60-69	years,	0	60-69	years,	0
	Total,	4		Total,	1

Average Age.

Male,	34.3 years.
Female,	23.0 years.

MODERATELY ADVANCED—65 CASES.

Sex.

46	Male.
19	Female.

Color.

Male.		Female.	
1	Black.	0	Black.
45	White.	19	White.
46	Total.	19	Total.

Social Condition.

17	Single.	8	Single.
26	Married.	9	Married.
2	Widowered.	1	Widowed.
1	Divorced.	1	Divorced.
0	Separated.	0	Separated.
46	Total.	19	Total.

Age Incident.

5- 9	years,	0	5- 9	years,	0
10-14	years,	0	10-14	years,	0
15-19	years,	7	15-19	years,	2
20-29	years,	7	20-29	years,	7
30-39	years,	22	30-39	years,	7
40-49	years,	8	40-49	years,	3
50-59	years,	2	50-59	years,	0
60-69	years,	0	60-69	years,	0
	Total,	46		Total,	19

Average Age.

Male,	31.9 years.
Female,	30.3 years.

FAR ADVANCED—103 CASES.

Sex.

79	Male.
24	Female.

Color.

Male.		Female.	
1	Black.	0	Black.
78	White.	24	White.
79	Total.	24	Total.

Social Condition.

33	Single.	6	Single.
40	Married.	17	Married.
3	Widowered.	0	Widowed.
3	Divorced.	0	Divorced
0	Separated.	1	Separated.
79	Total.	24	Total.

Age Incident.

5- 9	years,	0	5- 9	years,	0
10-14	years,	1	10-14	years,	1
15-19	years,	8	15-19	years,	1
20-29	years,	23	20-29	years,	11
30-39	years,	27	30-39	years,	6
40-49	years,	13	40-49	years,	5
50-59	years,	6	50-59	years,	0
60-69	years,	1	60-69	years,	0
	Total,	79		Total,	24

Average Age.

Male,	33.4 years.
Female,	30.9 years.

OCCUPATIONS AND WEEKLY INCOME.

Incipient Males,	4	Original.
Under occupational age,	0	
No occupation,	0	

Total occupied on admission,		3
Average weekly income of 3 cases,		$11 33

One case with no occupation on admission to the sanatorium was unoccupied at present.

There were 3 cases with occupations on admission; of these 2 were reported as occupied at present and one as unoccupied.

Total occupied at present,		2
Average weekly income of 2 cases,		$11 50
Incipient Females,		1

One case with an original occupation was occupied on admission to the sanatorium and at present as housewife.

Moderately Advanced Males,	43	Original.
Under occupational age,	0	
No occupation,	1	

The one case with no original occupation was unoccupied on admission to the sanatorium but was reported as occupied at present.

Total occupied on admission,		20
Average weekly income of 19 cases,		$11 21

There were 23 cases with no occupation on admission to the sanatorium; of these 11 were reported as occupied at present, 11 as unoccupied and no data on one.

There were 20 cases with occupations on admission to the sanatorium; of these 11 were reported as occupied at present, 7 as unoccupied and no data on 2.

Total occupied at present,		22
Average weekly income of 19 cases,		$12.63
Moderately Advanced Females,	9	Original.
Under occupational age,	0	
No occupation,	0	

Total occupied on admission,		8
Average weekly income of 1 case,		$5.00
Housewives,		7

One case unoccupied on admission to the sanatorium, was reported as unoccupied at present.

There were 8 cases with occupations on admission to the sanatorium; of these 7 were reported as occupied and one as unoccupied.

Total occupied at present,		7
All occupied as housewives.		
Far Advanced Males,	20	Original.
Under occupational age,	0	
No occupation,	0	

Total occupied on admission,		20
Average weekly income of 19 cases,		$13.90

There were 14 cases with no occupation on admission to the sanatorium; of these 3 were reported as occupied at present and 11 as unoccupied.

There were 20 cases with occupations on admission to the sanatorium; of these 7 were reported as occupied at present and 13 as unoccupied.

Total occupied at present,		10
Average weekly income of 8 cases,		$11.12
Far Advanced Females,	16	Original.
Under occupational age,	0	
No occupation,	2	

Of the 2 cases with no original occupation, both were unoccupied on admission to the sanatorium and one at present.

Total occupied on admission,	9
Average weekly income of 2 cases,	$6.00
Housewives,	7

There were 7 cases with no occupations on admission to the sanatorium; of these 3 were reported as occupied at present and 4 as unoccupied.

There were 9 cases with occupations on admission to the sanatorium; of these 8 were reported as occupied at present and one unoccupied.

Total occupied at present,	11
Average weekly income of 4 cases,	$4.00
Housewives,	7

DIED FROM CAUSES OTHER THAN TUBERCULOSIS.

Hamburg,	1	Far advanced,	Suicide.
Cresson,	3	Incipient,	Valvular disease of heart.
		Moderately advanced,	Nephritis,
		Far advanced,	Operation for appendicitis.
Mont Alto,	5	Moderately advanced,	Dilation of heart.
			Suicide by gas.
			Operation.
		Far advanced,	Suicide (no data).
			Suicide by gas.

SUBDIVISION OF TUBERCULOSIS SANATORIA.

PENNSYLVANIA STATE SANATORIUM FOR TUBERCULOSIS NO. 1, MONT ALTO.

FRED. C. JOHNSON, M.D., *Medical Director.*

During the year the bed capacity of the sanatorium has remained unchanged. The daily average capacity, including beds occupied by patients receiving honorariums, was 1,137, while the daily average number of patients treated was 1,087.

As noted elsewhere, the average hospital days of all classes discharged has increased from 147.8 to 155.4 days.

The number of cases discharged has decreased from 2,148 to 1,927, while the death rate has also declined from 10.7 to 7.8 per cent.

The number of far advanced cases admitted to the sanatorium has declined to 42.8 per cent., and while the need of beds for active and advanced cases has been less urgent, we are still obliged to quarter approximately one-half of this class of cases at the incipient camp at some disadvantage to both the patient and the sanatorium.

On January 1, 1915, there were 939 patients under treatment, of whom 638 were males and 301 were females. The admission classification of these cases was as follows: Incipient, 129 or 13.7 per cent., moderately advanced, 387 or 41.2 per cent., and far advanced, 423 or 45.1 per cent.

During the year 1,974 patients were admitted, of whom 1,228 were males and 746 were females. The admission classification of these cases was as follows: Incipient, 253 or 12.8 per cent., moderately advanced, 916 or 46.4 per cent., and far advanced, 805 or 40.8 per cent.

During the year 1,927 patients were discharged, of whom 1,226 were males and 701 were females. The admission classification of these cases was as follows: Incipient, 256 or 13.3 per cent., moderately advanced, 845 or 43.8 per cent., and far advanced, 826 or 42.9 per cent.

Not included in the above are 10 additional cases referred to in Table 1. Nine of these cases deserted before they could be examined and the disease classified, while the remaining case was a child born prematurely that lived but twenty hours.

On December 31, 1915, there were remaining under treatment 986 patients, of whom 640 were males and 346 were females. The admission classification of these cases was as follows: Incipient, 126 or 12.8 per cent., moderately advanced, 458 or 46.4 per cent., and far advanced, 402 or 40.8 per cent.

A total of 2,913 patients were treated during the year, of whom 1,866 were males and 1,047 were females. Admission classification of these cases was as follows: Incipient, 382 or 13.1 per cent., moderately advanced, 1,303 or 44.7 per cent., and far advanced 1,228 or 42.8 per cent.

In reviewing the records of cases discharged, it should be borne in mind that the Department adopted a revised schema of discharge classification, which became effective January 1, 1915, and is explained in the introduction to the "upfollow" statistics preceding. Under this revised schema, it will be noted that cases formerly discharged as "arrested" are now being discharged as "apparently arrested" and that those cases formerly discharged as "apparently cured" are now discharged as "arrested" unless the exactions of this class of cases have obtained for a period of six months instead of three months, in which event the term "apparently cured" is retained.

Of the 256 incipient cases discharged, 50 or 19.5 per cent. were discharged as apparently cured, 48 or 18.8 per cent. as arrested, 97 or 37.9 per cent. as apparently arrested, 52 or 20.3 per cent. as improved, 5 or 1.9 per cent. as unimproved, while 4 or 1.6 per cent. died.

Of the 845 moderately advanced cases discharged, 26 or 3.1 per cent. were discharged as apparently cured, 20 or 2.3 per cent. as arrested, 373 or 44.2 per cent. as apparently arrested, 303 or 35.9 per cent. as improved, 103 or 12.2 per cent. as unimproved, while 20 or 2.3 per cent. died.

Of the 826 far advanced cases discharged, 178 or 21.5 per cent. were discharged as apparently arrested, 281 or 34 per cent. as improved, 240 or 29.1 per cent. as unimproved, while 127 or 15.4 per cent. died.

Further reference to Table II shows the results obtained in the treatment of discharged cases in the various stages of the disease according to the length of stay.

The weight record of the 1,776 living patients discharged during the year is as follows:

ADULTS.

	Gain.	Average Gain.	Loss.	Average Loss.	Weight Stationary.
Incipient (118 cases),	111	11.6 lbs.	5	6.0 lbs.	2
Moderately advanced (775 cases),	654	13.8 lbs.	82	7.2 lbs.	39
Far advanced (689 cases),	476	12.0 lbs.	178	7.3 lbs.	35

CHILDREN.
(Under 15 Years.)

Incipient (134 cases),	128	9.5 lbs.	4	1.8 lbs.	0
Moderately advanced (50 cases),	40	13.6 lbs.	1	5.0 lbs.	0
Far advanced (10 cases),	7	9.3 lbs.	3	7.0 lbs.	0

The average hospital days of the 1,927 patients discharged was as follows:

Incipient,	175.5 days.
Moderately advanced,	162.9 days.
Far advanced,	141.6 days.
All classes,	155.4 days.

The results of treatment according to age incidence and the stage of the disease are shown in Table III. The average age of the incipient cases discharged was 16.1, of the moderately advanced, 29.1, of the far advanced, 32.2, and of all classes 28.7 years.

The sex, color and social condition of patients discharged during the year are shown in Table IV.

The results of treatment according to admission classification, sex, color and social condition are shown in Table V.

The nativity and parental nativity of patients discharged are shown in Table VI. One thousand two hundred and fifty-five or 65.2 per cent. were native born, while the father is recorded as native born in 792 or 41.1 per cent, and the mother in 821 or 42.6 per cent.

The county residence of patients treated is shown in Table VII.

Of the patients that died during the year, 4 or 2.6 per cent. were moribund on admission and 46 or 30.5 per cent. died within three months after admission.

Other than pulmonary tuberculosis, the following complications arranged according to the admission classification were recorded as direct or contributing causes of death. It is of interest to note that of the incipient cases that died the tuberculous process did not act as either a direct or contributing cause of death.

INCIPIENT.

Abscess, cerebral,	1
Anaemia, pernicious,	1
Carcinoma of uterus,	1
Endocarditis, chronic, with broken compensation,	1

MODERATELY ADVANCED.

Appendicitis with general peritonitis,	1
Arthritis, tuberculous, of knee joint,	1
Asthma, bronchial,	1
Enteritis, tuberculous,	2
Laryngitis, with enteritis, tuberculous,	2
Laryngitis, tuberculous, with chronic parenchymatous nephritis,	1
Meningitis, tuberculous,	1
Meningitis, tuberculous, with pulmonary oedema,	2
Oedema, pulmonary,	1
Peritonitis, tuberculous,	1

FAR ADVANCED.

Abscess, ischio-rectal,	1
Arthritis, tuberculous, of elbow joint,	2
Cardiac dilatation, acute,	3
Diabetes, mellitus,	1
Endocarditis, chronic,	1
Endocarditis, chronic, pulmonary oedema,	1
Enteritis, tuberculous,	6
Enteritis, tuberculous, with acute parenchymatous nephritis,	1
Enteritis, tuberculous, with chronic parenchymatous nephritis,	1
Enteritis, tuberculous, with pulmonary haemorrhage (terminal),	2
Haemorrhage, pulmonary (terminal),	2
Laryngitis, with enteritis, tuberculous,	15
Laryngitis, with meningitis, tuberculous,	2
Laryngitis, with pharyngitis, tuberculous,	1
Laryngitis, tuberculous,	41
Laryngitis, tuberculous, with acute cardiac dilatation,	2
Laryngitis, tuberculous, with acute parenchymatous nephritis,	1
Larnygitis, tuberculous, with angina pectoris,	1
Laryngitis, tuberculous, with carcinoma of thyroid gland,	1
Laryngitis, tuberculous, with chronic endocarditis,	1
Laryngitis, tuberculous, with pulmonary abscess,	1
Laryngitis, tuberculous, with pulmonary haemorrhage (terminal),	6
Laryngitis, tuberculous, with pulmonary oedema,	3
Laryngitis, tuberculous, with purpura haemorrhagica,	1
Meningitis, tuberculous,	5
Nephritis, acute parenchymatous,	2
Nephritis, chronic interstitial,	1
Nephritis, chronic parenchymatous,	1
Oedema, pulmonary,	2
Pyopneumothorax,	3

Of all cases discharged, a family history of pulmonary tuberculosis was obtained in 795 or 41.2 per cent., while a history of contact was recorded in 1,088 or 56.4 per cent.

Tabulated statistics in this connection are as follows:

FAMILY HISTORY.

History of tuberculosis,	795
No history of tuberculosis,	1,129
No data,	3
Total,	1,927

Pulmonary Tuberculosis.	
Father,	189
Brother,	216
Paternal aunt,	39
Paternal uncle,	66
Paternal grandfather,	18
Paternal grandmother,	15
Consort,	82
Mother,	235
Sister,	226
Maternal aunt,	61
Maternal uncle,	53
Maternal grandfather,	21
Maternal grandmother,	26
Children,	61

Glandular Tuberculosis.	
Father,	1
Mother,	1
Brother,	1
Sister,	4
Total,	7

Other Forms of Tuberculosis.	
Father,	4
Brother,	1
Mother,	2
Total,	7

CONTACT.

History of contact,	1,088	Home,	474
No history of contact,	835	Work,	372
No record,	4	Friends,	150
		Other,	92
Total,	1,927	Total,	1,088

The previous medical history of the 1,927 cases discharged was as follows:

No record,	6	Pertussis,	1,158
No disease,	118	Rheumatism,	406
Diphtheria,	208	Pleurisy,	687
Pneumonia,	545	Syphilis,	22
Influenza,	585	Enteric fever,	299
Measles,	1,248	Frequent colds,	1,158

The record of the number of persons in the families of patients discharged and the monthly income of such families is as follows:

Number in Family.	
No record,	60
1 in family,	78
2 in family,	173
3 in family,	311
4 in family,	308
5 in family,	294
6 in family,	245
7 in family,	174
8 in family,	119
9 in family,	68
10 in family,	46
11 in family,	18
12 in family,	13
13 in family,	5
14 in family,	2
15 in family,	3
17 in family,	2
18 in family,	5
19 in family,	1
20 in family,	1
24 in family,	1
Average for 1,867 families,	5.1

Family Income Per Month.	
No record,	54
No income,	335
Less than $10,	18
$10—19,	129
20—29,	189
30—39,	189
40—49,	358
50—59,	175
60—69,	196
70—79,	94
80—89,	74
90—99,	28
100 and over,	88
Average for 1,538 families,	$48.24

The housing conditions of the cases discharged were as follows:

Character of Abode.	
No record,	5
Private house,	1,577
Tenement,	207
Boarding house,	88
Hospital,	13
Insitution,	37
Total,	1,927

Number of Rooms.	
No record,	60
1 room,	117
2 rooms,	408
3 rooms,	641
4 rooms,	338
5 rooms,	168
6 rooms,	96
7 rooms,	35
8 rooms,	22
9 rooms,	21
10 rooms,	6
11 rooms,	3
12 rooms,	4
14 rooms,	2
15 rooms,	2
16 rooms,	1
18 rooms,	1
19 rooms,	1
20 rooms,	1
Average number rooms for 1,867 families,	3.5

The occupations of patients discharged during the year are shown below in the form employed by the United States Census Bureau:

MALES.

ALL OCCUPATIONS,	1101	
PROFESSIONAL GROUP,	18	
Architects, artists and teachers of arts,		1
Engineers and surveyors,		9
Musicians and teachers of music,		1
Teachers (school),		5
Others of this class not specified,		2
CLERICAL AND OFFICIAL GROUP,	84	
Bookkeepers, clerks and copyists,		69
Collectors, agents and auctioneers,		6
Others of this class not specified,		9
MERCANTILE AND TRADING GROUP,	57	
Apothecaries and pharmacists,		2
Commercial travelers,		36
Merchants and dealers,		4
Hucksters and peddlers,		14
Others of this class not specified,		1
PUBLIC ENTERTAINMENT GROUP,	6	
Saloon keepers, liquor dealers and bartenders,		6
PERSONAL SERVICE GROUP,	27	
Barbers and hairdressers,		16
Janitors and sextons,		4
Policemen, watchmen, detectives,		3
Others of this class not specified,		4
LABORING AND SERVANT GROUP,	208	
Laborers (not agricultural),		169
Servants,		39

MANUFACTURING AND MECHANICAL INDUSTRY GROUP,	409	
Bakers and confectioners,		16
Blacksmiths,		8
Boot and shoemakers,		16
Butchers,		9
Cabinetmakers and upholsterers,		12
Carpenters and joiners,		29
Cigar makers and tobacco workers,		5
Clock and watch repairers, jewelers,		3
Compositors, printers, pressmen,		16
Coopers,		4
Engineers and firemen (not railway),		7
Glass blowers and glass workers,		8
Hat and cap makers,		7
Iron and steel workers,		58
Leather workers,		5
Machinists,		56
Marble and stone cutters,		9
Masons,		1
Mill and factory operators (textile),		36
Millers (flour and grist),		1
Painters, glaziers,		23
Plasterers,		2
Plumbers, gas and steam fitters,		6
Tailors,		37
Tinners and tinware makers,		3
Others of this class not specified,		32
AGRICULTURAL AND TRANSPORTATION GROUP,	189	
Draymen, hackmen, teamsters,		34
Farmers, planters and farm laborers,		25
Gardeners, florists and nurserymen,		4
Livery stable keepers, hostlers,		3
Lumbermen and raftsmen,		4
Miners and quarrymen,		81
Steam railroad employes,		26
Others of this class not specified,		12
ALL OTHER MALE OCCUPATIONS,	103	
UNDER OCCUPATIONAL AGE,	100	
NO OCCUPATION,	25	

FEMALE.

ALL OCCUPATIONS,	516	
Artificial flower and paper box makers,		3
Bookkeepers, clerks and copyists,		22
Cigar makers and tobacco workers,		10
Dressmakers and seamstresses,		18
Hotel and boarding house keepers,		10
Housewives,		147
Laundresses,		9
Milliners,		5
Mill and factory operatives,		53
Nurses and midwives,		11
Servants,		86
Stenographers and typists,		9
Teachers in schools,		4
Telegraph and telephone operators,		7
All other female occupations,		122
UNDER OCCUPATIONAL AGE,	102	
NO OCCUPATION,	83	

The work of the laryngeal department has steadily increased, a total of 3,692 routine examinations and treatments having been made during the year. Of 1,776 living cases discharged, 661 or 37.2 per cent. were complicated by tuberculous laryngitis.

The classification and results of treatment of this complication are as follows:

Incipient—411.	Apparently cured,	65
	Arrested,	137
	Improved,	134
	Stationary,	41
	Progressive,	24
	Not examined,	10
Moderately advanced—215.	Apparently cured,	19
	Arrested,	18
	Improved,	128
	Stationary,	18
	Progressive,	29
	Not examined,	3
Far advanced—35.	Apparently cured,	3
	Arrested,	1
	Improved,	10
	Stationary,	10
	Progressive,	11
	Not examined,	0

The following operations were performed by or upon the advice of the visiting laryngologist:

EAR:	
Tympanotomy,	2
EYE:	
Curettement, chalazion,	1
Dilatation, lachrymal duct,	11
Excision, papilloma of conjunctiva,	1
Incision, hordeolum,	3
Mastoidotomy,	2
Refraction,	118
Transplantation of pterygium,	1
NOSE:	
Paracentesis maxillary antrum,	2
Removal of nasal polypi,	5
Removal of nasal spur,	1
Resection, sub-mucous (nasal septum),	5
Turbinectomy,	3
Turbinotomy,	2
THROAT:	
Laryngeal nerve block (alcohol),	20
Tonsillectomy,	7
Tonsillectomy and adenoidectomy,	22

During the year the following operations were performed by or upon the advice of the consulting surgeon:

Appendectomy,	11
Laparotomy (for intestinal obstruction),	1
Thoracotomy,	2

RESULTS OBTAINED WITH THE USE OF THE BIOLOGICAL PRODUCTS OF THE TUBERCLE BACILLUS (SUSPENSION OF DEAD TUBERCLE BACILLI, AND EXTRACT OF TUBERCLE BACILLI, OR "DIXON'S FLUID").

During the year 293 cases treated with the biological products of the tubercle bacillus were discharged (Table VIII). Of these 75 were classified on admission as incipient, 182 as moderately advanced, and 36 as far advanced.

Fifty-eight cases, of whom 40 were males and 18 were females, remained under treatment for a period of less than three months. Of these 20 were classified on admission as incipient, 37 as moderately advanced and 1 as far advanced.

Of the 20 incipient cases remaining under treatment less than three months, 7 or 35 per cent. were discharged as apparently arrested, and the remaining 13 or 65 per cent. as improved. All of these cases gained in weight, the average gain being 7 pounds. The average duration of stay of this group of patients was 46.7 days.

Of the 37 moderately advanced cases remaining under treatment less than three months, 15 or 40.5 per cent. were discharged as apparently arrested, 20 or 54.1 per cent. as improved, while the condition of 2 or 5.4 per cent. was unimproved. Of these cases, 34 or 91.9 per cent. gained weight, the average gain being 10.3 pounds. The weight of 2 or 5.4 per cent. remained stationary, while one patient lost one pound. The average duration of stay of this group of patients was 56.6 days.

Only one of the far advanced cases treated with the biological products was discharged prior to the expiration of three months' treatment. The condition of this patient at the time of discharge was described as improved although his weight remained stationary. The length of stay of this patient was 62 days.

One hundred and twenty-seven cases, of whom 67 were males and 60 were females, remained under treatment for a period varying from three to six months. Of these 33 were classified on admission as incipient, 75 as moderately advanced, and 19 as far advanced.

Of the 33 incipient cases remaining under treatment for a period varying from three to six months, 7 or 21.2 per cent. were discharged as arrested, 23 or 69.7 per cent. as apparently arrested, and the remaining 3 or 9.1 per cent. as improved. Of these cases 32 or 97 per cent. gained weight, the average gain being 14 pounds, and one

patient lost 10 pounds. The weight of the case referred to as having lost 10 pounds was recorded at the time of admission as 184 pounds and height as 5 feet 3 inches. The temperature, pulse and respiration of this patient remained approximately normal while under treatment, and physical examinations of the chest revealed signs of a healing process. Under the circumstances no special significance was attached to the loss in weight, and the patient was discharged after a period of treatment of 100 days as an apparently arrested case. The average duration of stay of this group of patients was 130.8 days.

Of the 75 moderately advanced cases remaining under treatment for a period varying between three and six months, 2 or 2.7 per cent. were discharged as arrested, 63 or 84 per cent. as apparently arrested, 9 or 12 per cent. as improved, while the condition of one or 1.3 per cent. remained unimproved. Of these cases 72 or 96 per cent. gained weight, the average gain being 16.1 pounds, while 3 or 4 per cent. lost in weight, the average loss being 3.7 pounds. The average duration of stay of this group of patients was 124.7 days.

Of the 19 far advanced cases remaining under treatment for a period varying from three to six months, 10 or 52.6 per cent. were discharged as apparently arrested, 6 or 31.6 per cent. as improved, 2 or 10.5 per cent. as unimproved, while one or 5.3 per cent. died. Of these cases, 16 or 84.2 per cent. gained weight, the average gain being 11.1 pounds, while 3 or 15.8 per cent. lost weight, the average loss being 12 pounds. The average duration of stay of this group of patients was 128.3 days.

One hundred and eight cases, of whom 59 were males and 49 were females, remained under treatment for a period of 6 months and over. Of these 22 were classified on admission as incipient, 70 as moderately advanced, and 16 as far advanced.

Of the 22 incipient cases remaining under treatment for a period of 6 months or over, 5 or 22.7 per cent. were discharged as apparently cured, 2 or 9.1 per cent. as arrested, 12 or 54.6 per cent. as apparently arrested, and the remaining 3 or 13.6 per cent. as improved. All of these patients gained in weight, the average gain being 13.2 pounds. The average duration of stay of this group of patients was 290.6 days.

Of the 70 moderately advanced cases remaining under treatment for a period of 6 months or over, 7 or 10 per cent. were discharged as apparently cured, 4 or 5.7 per cent. as arrested, 48 or 68.6 per cent. as apparently arrested, 5 or 7.1 per cent. as improved, 4 or 5.7 per

cent. as unimproved, while 2 or 2.9 per cent. died. Of these cases 63 or 90 per cent. gained weight, the average gain being 16 pounds, the weight of 4 or 5.7 per cent. remained stationary, while 3 or 4.3 per cent. lost weight, the average loss being 18 pounds. The average duration of stay of this group of patients was 298.7 days.

Of the 16 far advanced cases remaining under treatment for a period of six months or over, 9 or 56.3 per cent. were discharged as apparently arrested, 1 or 6.2 per cent. as improved, 4 or 25 per cent. as unimproved, while 2 or 12.5 per cent. died. Of these cases 12 or 75 per cent. gained weight, the average gain being 11.4 pounds, while 4 or 25 per cent. lost weight, the average loss being 10.8 pounds. The average duration of stay of this group of patients was 336.5 days.

A summary of the results of treatment of all cases discharged since the opening of the sanatorium in 1907 to December 31, 1914, is shown in Table IX.

During the year reports were returned from the laboratory on the examination of 12,312 specimens of sputum and 7,691 specimens of urine. Special examinations of sputum following admission of patients demonstrated the presence of tubercle bacilli in 33.8 per cent. of the cases, while in the examination of sputum of patients applying for discharge, the organism was present in 24.8 per cent. of the cases. Routine chemical and miscropical examination of the milk supply has been made, while much additional work has been required on special examinations incident to the development of complicating illnesses. Twenty autopsies were performed during the year.

Thirty unclaimed bodies were interred in the sanatorium cemetery, aggregating 182 patients who have received Christian burial by the Department since the opening of the sanatorium.

During April and again in December a sporadic case of diphtheria developed in the Children's Hospital. Neither of these children had an opportunity of acquiring the disease outside of the sanatorium, nor could the source be traced to any pre-existing case or causes within, and the most probable explanation appears to be that the infection was carried by a visitor. Klebs-Loffler bacilli were demonstrated in both cases by smear and culture. Large doses of antitoxin were administered early with gratifying results, and contacts were so immunized without the development of other cases.

During the latter part of November, 6 cases of enteric fever developed among members of the nursing staff at the incipient camp. In investigating the cause of the outbreak it was apparent that the infection was not water borne nor that it was disseminated through milk or uncooked vegetables, since our entire population had received the same supplies. In the investigation of casual and extraordinary sources of infection it was recalled that a party was given by the nurses on November 12th, at which time a cheap grade of shucked oysters was served uncooked. Further investigation of this circumstance developed the fact that all cases and suspects had eaten raw oysters at this function. Data collected in this connection shows that 26 attended the party, of whom 15 ate raw oysters and 6 or 40 per cent. developed the disease, while 17 ate stewed oysters without the development of untoward symptoms. All of the cases recovered and with proper isolation and disinfection no secondary cases occurred. An interesting feature of the outbreak was the presence in all of the cases of acute nephritis which developed early during the prodromal stage and continued until convalescence was well established. Two cases developed phlebitis and another was followed by myocarditis.

Routine fire drills and inspection of fire fighting appliances have been observed during the year.

Our corps of convalescent working patients has been adequate for the performance of the greater part of the light work required about the sanatorium. This comprises the numbering of sputum cups and napkins used by the patients, the manufacture of sputum cup fillers required at Hamburg and Cresson, as well as for the State tuberculosis dispensaries. Much other work, such as whitewashing, painting, caring for lawns and tennis courts and work about the chicken farm, has furnished employment to the physical advantage of convalescing patients.

The annual anti-fly-breeding campaign was instituted and the details were carried out by patients.

Patients who have been under treatment for a period of three months, and whose physical signs exhibit sufficient arrestment to warrant it, are furnished suitable employment for which they receive honorariums.

Under the supervision of the gardener, ground was prepared for garden work by juvenile patients, and from the standpoint of instruction, diversion and discipline, most gratifying results were obtained.

At the Monogham field 20 acres of ground were planted in potatoes and the same number in field corn.

Four hundred privet hedge cuttings were used in resetting and extending existing hedges.

One hundred and eighty rhododendron plants, 300 laurel plants and 850 white pine trees were set out about the property during the year.

Farm products including those from the truck garden, poultry department and piggery were as follows:

2,635	bushels potatoes.
1,000	bushels corn,
800	bushels oats.
2	tons hay.
3,905	dozen sweet corn.
1,480	pounds tomatoes.
1,510	bushels turnips.
12,508	heads lettuce.
1,954	heads cabbage.
3,167	squash.
1,935	dozen radishes.
199½	bushels carrots.
202	cauliflower.
193	bushels beets.
147½	bushels string beans.
46	bushels butter beans.
50½	bushels peas.
16½	bushels salsify.
50	dozen green onions.
4	bushels onions.
17	dozen cucumbers.
38	pumpkins.
12	dozen peppers.
4½	bushels parsnips.
2½	bushels spinach.
3½	bushels sweet potatoes.
100	dozen bunches celery.
459	pounds plums.
91	bushels apples.
20½	bushels peaches.
10	pounds pears.
½	peck quinces.
1,536	chickens.
1,220	squabs.
22	guineas.
1	turkey.
9,689¾	dozen hen eggs.
608	dozen duck eggs.
15	hogs—weight 4,151 pounds (dressed).
8	rabbits.

Two hundred and twenty-eight guinea pigs were furnished the laboratories of the department.

Improvements, construction and maintenance work carried on during the past year was as follows:—

One hundred and seventy tons of coal hauled from the switch by the traction engine and State teams.

Five hundred and fifty cords of wood sawed.

One thousand tons of ice cut and stored.

A room for the storage of milk at main dining room building insulated and ice compartment rebuilt.

The basement of the hospital dispensary and staff buildings whitewashed.

All fruit trees on the property were sprayed with Bordeaux Mixture.

Hog pens and yards erected on a location better facilitating drainage.

Sixteen pavilions equipped with new canvas curtains.

New corrugated galvanized iron roof put on garbage incinerating building.

Garbage sterilizing tank built and connected with upright boiler for the sterilization of offal for hogs.

Walks changed and grading completed for seeding in men's upper camp.

Bath house and toilet buildings at lower camp painted with two coats of paint.

Seven colony houses erected for chickens.

Chapel floor filled and varnished with two coats of floor varnish.

Rustic arbor erected for grape vines near the stable.

Eight hundred and fifty cubic yards of excavation in connection with repairs to outside steam line.

Approximately 225 cubic yards of stone crushed for use in repairing steam lines.

Thirty-eight lineal feet of brick and concrete tunnel for steam line constructed under main dining room building.

Property line and water lines cleared of underbrush.

Concrete fire proof sections of hospital painted with three coats of lead and oil paint, inside and outside.

Approximately 400 yards of road rebuilt in Brandon's Hollow.

Twin cottage painted with two coats of lead and oil paint.

Bungalo painted with one coat of white lead and oil paint.

It is a matter of regret that funds appropriated were insufficient to provide for the erection of an entertainment hall adequate for the needs of the sanatorium.

During the summer months the patients have been able to witness outdoor theatrical entertainments and baseball games, but during the winter months diversion from the sanatorium routine through theatricals, moving picture entertainments, etc., cannot be had through the need of an entertainment hall.

As in past years Memorial Day was fittingly observed at the sanatorium. At 10:00 A. M. the patients marched in file to the cemetery where a musical program was rendered by the patients' choir and brief addresses were given by Father McGee and Rev. H. D. Speakman. During the afternoon the patients witnessed a ball game between the medical staff and a club from Mont Alto.

An appropriate program, including an address by C. W. Webbert, Esq., was given in the morning on Independence Day. During the afternoon the patients witnessed a baseball game with the usual evidences of interest and entertainment.

We are indebted to Mr. C. W. Boyer, proprietor of the Orpheum Theatre, Chambersburg, Penna., and his manager, Mr. F. A. Shinebrook, for an entertainment furnished by Boyer's Minstrel Girls on July 28th. The program was excellent and the entire performance thoroughly enjoyed by the patients.

Through the interest and efforts of Mr. C. W. Jackson, a member of the Pennsylvania State Constabulary stationed at the sanatorium, a wireless receiving station was installed early in the summer, by which the time was received daily and, of more interest to the patients, the baseball scores of both the National and American Leagues.

On Christmas Day the larger buildings were appropriately decorated with holly and evergreens and Christmas trees were provided at the hospital, the main dining room building and the children's hospital. During the dinner hour instrumental and vocal music was furnished by the orchestra and choir and thereafter gifts for all patients were distributed from the trees. A most enjoyable day was closed with the receipt of a lengthy telegram expressing deep concern in the interest and welfare of patients and staff from Dr. Samuel G. Dixon, Commissioner of Health. Cheering Christmas messages, extended through the columns of Spunk, were also received from Governor Brumbaugh, Mayor Rudolph Blankenburg, Mrs. Mary Roberts Rinehart and Mr. Leigh Mitchell Hodges.

The publication of Spunk by the patients continues with a satisfactory increase in both the circulation and the finances of the magazine.

Numerous contributions of bound books have been made to the library within the past year. Many of our older volumes are in need of new binding, and as recommended heretofore, a more central location should be provided for the library.

Religious services have been regularly conducted by clergymen of the Protestant, Roman Catholic and Jewish faiths.

During the year the following staff changes occurred:

Dr. S. Herman Rinehart appointed to the medical staff March 16th.

Dr. William R. McKelvey appointed to the medical staff on March 25th.

Dr. Wesley C. Thomas appointed to the medical staff on March 27th.

Dr. J. J. Cosgrove appointed to the medical staff on April 1st.

Dr. William W. Woods appointed to the medical staff on April 20th.

Dr. Charles H. Haralson appointed to the medical staff on May 21st.

Dr. Thomas A. Stevens re-appointed to the medical staff on June 18th.

Dr. Nathan G. Shafritz appointed to the medical staff on September 7th.

Dr. Maurice T. Sloane appointed to the medical staff on September 26th.

Dr. George D. Heist appointed to the medical staff on September 29th.

Dr. C. H. Cherry appointed to the medical staff on October 6th.

Dr. Louis A. Packard appointed to the medical staff on October 18th.

Dr. H. M. Stewart appointed to the medical staff November 2nd.

Miss Margaret M. Bell appointed Acting Nurse-in-Charge Children's Hospital, December 8th.

Dr. S. A. Silk resigned January 12th.

Mr. Elmer McKee, bacteriologist, resigned January 15th to accept a similar position at St. Joseph's Hospital, Reading, Penna.

Dr. Joseph Stockler resigned February 1st, after a service of three and a half years, to enter private practice at Reading, Penna.

Dr. Gillman C. Dolley resigned March 21st.

Dr. Thomas A. Stevens resigned March 25th to accept the position of medical superintendent at the Springfield Lake Tuberculosis Sanatorium, near Akron, Ohio.

Dr. William R. McKelevey and Dr. Wesley C. Thomas resigned September 7th.

Dr. Joseph Aaronoff resigned October 14th, after a service of one year and eight months, to enter private practice at New London, Penna.

Dr. J. J. Cosgrove resigned December 18th to accept the position of assistant physician at the Westfield (Mass.) State Tuberculosis Sanatorium.

Miss Catherine I. Cobb, Nurse-in-Charge, Children's Hospital, resigned December 8th.

Dr. George D. Heist resigned October 31st after a service of one month.

Report is made with deep regret of the demise of Dr. William T. Davies, which occurred at the sanatorium on the afternoon of March 4th. During the three years that Dr. Davies was in charge of the hospital, where he was also resident laryngologist, his services were eminently satisfactory and while acquitting himself most creditably as an executive, he was also able, through his gentle, sympathetic disposition, to command the interest and esteem of the patients with whom he came in contact.

Dr. Henry A. Gorman, of the resident staff, was appointed to the vacancy caused by the death of Dr. Davies.

Contributions received and acknowledged during the year have been as follows:

Name of Donor.	Address.	Donation.
Amerikai Magyar Nepszava,	New York,	Newspapers.
Anderson, Mrs. G. A.,	Waynesboro,	Sweater.
Andrews, Mrs. J. Douglass,	Harrisburg,	Clothing.
Arment, Mr. J. T.,	St. Louis,	Magazines.
Armstrong, Miss H. K.,	Philadelphia,	Clothing.
Associated Charities,	Harrisburg,	Clothing.
Baker, Mrs. John B.,	Shippensburg,	Clothing.
Beaver, G. B.,	Waynesboro,	Clothing.
Bell, Miss Louisa B.,	Mt. Airy,	Clothing.
Black, Mrs. William H.,	Flora Dale,	Coat.
Boher, Mrs. John E.,	Shippensburg,	Clothing and magazines.
Charity Organization Society,	Easton,	Clothing.
Chislett, Mrs. R. E.,	Pittsburgh,	Magazines.
Civic Club,	Carlisle,	Clothing, toys and dolls.
Civic Club,	Harrisburg,	Clothing.
Civic Club,	Newville,	Magazines.
Coffey, Mrs. W. J.,	Shippensburg,	Clothing and magazines.
Cowen, Mrs. J. P.,	Pittsburgh,	Socks.
Darling Pump & Mfg. Co.,	Williamsport,	Books and magazines.
Deckert, Miss Helen,	Chambersburg,	Clothing.
Dispensary No. 107,	Philadelphia,	Clothing.
Dixon, Mrs. S. G.,	Bryn Mawr,	Clothing, games and toys.
Dixon, Miss Catherine,	Bryn Mawr,	Books, clothing.
Evans, Mrs. E. C.,	Ardmore,	Sweater.
Evans, Miss Eysette,	Ardmore,	Clothing and pulse warmers.
Evans, Mary,	Ardmore,	Pulse warmers.
Fox, Miss,	Harrisburg,	Coat.
Fry, Mrs. E. W.,	Philadelphia,	Books and magazines.
Gay, Mrs. J. H.,	Philadelphia,	Clothing.
Haupt, Mrs. Edward,	Apollo,	Clothing.
Hench, Miss Mary M.,	Carlisle,	Clothing and reading matter.
Henderson, Mrs. W. H.,	Harrisburg,	Clothing.
Hospital Magazine Guild,	Harrisburg,	Scrap books.
Johnson, Mrs. F. C.,	Mont Alto,	Children's clothing.
Johnston, Mrs. S. C. W.,	Carlisle,	Clothing.
Ker, Mrs. W. O.,	Kerrsville,	Clothing.
Kennedy, Mrs. George,	Harrisburg,	Clothing.
Kloock, Mrs. George F.,	Philadelphia,	Knitted hoods.
Lang, Mrs.,	Germantown,	Clothing.
McGee, Father P. F.,	Mont Alto,	Shoes and stockings.
McHale, Mrs. L. P. (through Father McGee).	Philadelphia,	Men's socks.
McKenny, Mrs. H. N.,	New York City,	Magazines.
McKinney, Mrs. F. U.,	New York City,	Magazines.
McKinney, H. N. & M.,	Chicago,	Magazines.
Market Square Presbyterian Church (Mrs. E. R. Bailey's S. S. Class).	Harrisburg,	Games and toys.
Maule, Mrs.,	Philadelphia,	Clothing.
Moore, Mrs. Hannah P.,	Philadelphia,	Clothing.
Mullen, Miss Catherine,	Harrisburg,	Clothing.
Needlework Guild,	Hatboro,	Clothing.
Needlework Guild,	Lansdowne,	Clothing.
Needlework Guild,	Philadelphia,	Clothing.
Needlework Guild,	Shippensburg,	Clothing.
Needlework Guild,	Waynesboro,	Clothing.
Peal, Mr. Rembrant,	New York City,	Socks.
Reily, Mrs. G. W.,	Harrisburg,	Muffler.
Rungee, Mr. H. A.,	Mercersburg,	Clothing.
Ruthraeff, Mr. J. R.,	Chambersburg,	Clothing.
Sheets, Mr. Floyd,	Harrisburg,	Clothing.
Shook, Mrs. John H.,	Greencastle,	Magazine subscription.
Stewart, Mrs. George W.,	Shippensburg,	Clothing.
Stillwell, Mr. J. P.,	Doylestown,	Clothing.
Stoddart, Curwin,	Jenkintown,	Books and clothing.
Strickler, Mrs. J. S.,	Waynesboro,	Books.
Szabadsag,	Cleveland,	Newspapers.
Walker, Mr. S.,	Shippensburg,	Clothing.
Whitmer, Rev. A. C.,	Waynesboro,	Magazines.
Wohlfarth, Mrs. John,	Harrisburg,	Clothing.
Woman's Auxiliary (Grace Church Branch).	Nickel Mines,	Clothing.
Women's Christian Temperance Union,	Steelton,	Clothing.
Women's Club, The,	Mechanicsburg,	Clothing.
Zion Reformed Church (Girls' Auxiliary)	Chambersburg,	Clothing.

TABLE I.

		Total.	Incipient.	Per Cent.	Moderately Advanced.	Per Cent.	Far Advanced.	Per Cent.
Patients on hand January 1, 1915,	Total,	939	129	13.7	387	41.2	423	45.1
	Male,	638	70		251		317	
	Female,	301	59		136		106	
Patients admitted,	Total,	1,974	253	12.8	916	46.4	805	40.8
	Male,	1,228	128		552		548	
	Female,	746	125		364		257	
Patients discharged,	Total,	1,927	256	13.3	845	43.8	826	42.9
	Male,	1,226	127		522		577	
	Female,	701	129		323		249	
Patients remaining December 31, 1915,	Total,	986	126	12.8	458	46.4	402	40.8
	Male,	640	71		281		288	
	Female,	346	55		177		114	
*Patients treated during 1915,	Total,	2,913	382	13.1	1,303	44.7	1,228	42.2
	Male,	1,866	198		803		865	
	Female,	1,047	184		500		363	

*Unclassified—10.

TABLE II.

Admission Classification.	Discharge Classification.	Total.	P. C.	Less Than 3 Months.	3-6 Months.	6-9 Months.	9-12 Months.	12-18 Months.	18-24 Months.	More Than 24 Months.	Average Hospital Days.
Incipient 256 cases.	Apparently cured,	50	19.5	0	1	25	9	6	8	1	332.1
	Arrested,	48	18.8	0	41	4	1	1	0	1	170.6
	Apparently arrested,	97	37.9	14	57	19	2	3	2	0	158.6
	Improved,	52	20.3	37	10	2	2	0	1	0	83.0
	Unimproved,	5	1.9	4	1	0	0	0	0	0	43.6
	Dead,	4	1.6	3	1	0	0	0	0	0	53.5
Moderately Advanced 845 cases.	Apparently cured,	26	3.1	0	0	10	6	7	2	1	353.6
	Arrested,	20	2.3	6	11	4	2	2	1	0	231.2
	Apparently arrested,	373	44.2	39	196	79	17	29	6	7	198.7
	Improved,	303	35.9	174	98	19	6	3	2	1	98.4
	Unimproved,	103	12.2	51	23	13	8	4	5	0	140.6
	Dead,	20	2.3	6	5	0	3	3	2	1	259.6
Far Advanced 826 cases.	Apparently cured,	0	0.0	0	0	0	0	0	0	0	0.0
	Arrested,	0	0.0	0	0	0	0	0	0	0	0.0
	Apparently arrested,	178	21.5	8	85	42	16	15	4	8	233.4
	Improved,	281	34.0	112	107	32	15	8	3	4	136.6
	Unimproved,	240	29.1	115	71	22	9	14	4	5	134.1
	Dead,	127	15.4	47	30	19	2	8	13	8	242.9

TABLE III.

	Age Periods.	Total.	Per Cent.	Apparently Cured.	Per Cent.	Arrested.	Per Cent.	Apparently Arrested.	Per Cent.	Improved.	Per Cent.	Unimproved.	Per Cent.	Dead.	Per Cent.
Total,		1,927	100.0	76	3.9	68	3.5	648	33.6	636	33.0	348	18.1	151	7.9
Total,		256	13.3	50	19.5	48	18.8	97	37.9	52	20.3	5	1.9	4	1.6
Incipient,	-15	138	53.9	44	31.9	38	27.5	38	27.5	15	10.9	1	.7	2	1.5
	15-24	82	32.0	6	7.3	6	7.3	45	54.9	22	26.8	3	3.7	0	0.0
	25-34	22	8.6	0	0.0	3	13.6	9	40.9	8	36.4	0	0.0	2	9.1
	35-44	11	4.3	0	0.0	0	0.0	4	36.4	6	54.5	1	9.1	0	0.0
	45-54	3	1.2	0	0.0	1	33.3	1	33.3	1	33.3	0	0.0	0	0.0
	55	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Total,		845	43.8	26	3.1	20	2.3	373	44.2	303	35.9	103	12.2	20	2.3
Moderately Advanced,	-15	50	5.9	17	34.0	6	12.0	22	44.0	5	10.0	0	0.0	0	0.0
	15-24	279	33.0	2	.7	7	2.5	134	48.0	96	34.4	38	13.7	2	.7
	25-34	268	31.7	4	1.5	6	2.2	113	42.2	102	38.0	35	13.1	8	3.0
	35-44	155	18.3	2	1.3	1	.6	63	40.6	63	40.6	22	14.2	4	2.6
	45-54	72	8.5	0	0.0	0	0.0	32	44.5	28	38.9	7	9.7	5	6.9
	55	21	2.5	1	4.8	0	0.0	9	42.8	9	42.8	1	4.8	1	4.8
Total,		826	42.9	0	0.0	0	0.0	178	21.5	281	34.0	240	29.1	127	15.4
Far Advanced,	-15	14	1.7	0	0.0	0	0.0	4	28.6	2	14.2	4	28.6	4	28.6
	15-24	224	27.1	0	0.0	0	0.0	44	19.7	71	31.7	76	33.9	33	14.7
	25-34	251	30.4	0	0.0	0	0.0	55	21.9	85	33.9	82	32.7	29	11.5
	35-44	213	25.8	0	0.0	0	0.0	43	20.2	79	37.1	53	24.9	38	17.8
	45-54	96	11.6	0	0.0	0	0.0	22	22.9	35	36.5	19	19.8	20	20.8
	55	28	3.4	0	0.0	0	0.0	10	35.7	9	32.2	6	21.4	3	10.7

TABLE IV.

		Total.	White.	Black and Other.	Children (Under 15 Years).	Single.	Married.	Divorced.	Widowed.	Separated.
Total,		1,927	1,867	60	202	759	802	102	12	50
Incipient,	Total,	256	245	11	138	82	28	5	2	1
	Male,	127	121	6	69	40	14	2	1	1
	Female,	129	124	5	69	42	14	3	1	0
Moderately Advanced,	Total,	845	824	21	50	342	379	40	7	21
	Male,	522	513	9	28	220	246	18	3	7
	Female,	323	311	12	22	122	133	28	4	14
Far Advanced,	Total,	826	798	28	14	335	395	51	3	28
	Male,	577	560	17	3	243	282	32	3	14
	Female,	249	238	11	11	92	113	19	0	14

TABLE V.

		Total.	P. C.	White.		Black and Other.		Children (Undre 15 Years).		Single.		Married.	
				Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
Total,		1,927		1,194	673	32	28	100	102	503	256	623	343
Incipient,	Total,	255	13.3	121	124	6	5	69	69	40	42	18	18
	Apparently cured.	50	19.5	18	25	5	2	19	25	4	2	0	0
	Arrested,	48	18.8	20	28	0	0	17	21	1	5	2	2
	Apparently arrested,	97	37.9	55	40	0	2	25	13	24	23	6	6
	Improved.	52	20.3	23	27	1	1	5	10	9	11	10	7
	Unimproved,	5	1.9	3	2	0	0	1	0	2	0	0	2
	Dead,	4	1.6	2	2	0	0	2	0	0	1	0	1
Moderately Advanced,	Total,	845	43.8	513	311	9	12	28	22	220	122	274	179
	Apparently cured.	26	3.2	14	12	0	0	13	4	1	2	0	6
	Arrested,	20	2.3	8	9	1	2	3	3	6	5	0	3
	Apparently arrested,	373	44.1	240	126	4	3	10	12	116	58	118	59
	Improved.	303	35.9	178	120	2	3	2	3	61	42	117	78
	Unimproved,	103	12.2	61	39	1	2	0	0	30	15	32	26
	Dead,	20	2.3	12	5	1	2	0	0	6	0	7	7

Far Advanced,	Total,	826	42.8	560	238	17	11	3	11	243	92	331	146
	Apparently cured,	0	0.0	0	0	0	0	0	0	0	0	0	0
	Arrested,	0	0.0	0	0	0	0	0	0	0	0	0	0
	Apparently arrested,	178	21.5	136	41	0	1	2	2	56	13	78	27
	Improved,	281	34.0	196	81	2	2	1	1	69	26	128	56
	Unimproved,	240	29.1	139	88	8	5	0	4	68	41	79	48
	Dead,	127	15.4	89	28	7	3	0	4	50	12	46	15

TABLE VI.

	Total.	Incipient.			Moderately Advanced.			Far Advanced.		
		Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.
Total,	1,927	256	127	129	845	522	323	826	577	249
United States,	1,255	203	100	103	526	314	212	526	365	161
Ireland,	57	5	2	3	22	11	11	30	21	9
Germany,	38	4	2	2	10	7	3	24	17	7
Italy,	74	6	3	3	36	28	8	32	21	11
Hungary,	147	12	6	6	73	51	22	62	47	15
Russia,	230	18	11	7	124	77	47	88	68	20
Poland,	12	0	0	0	3	3	0	9	6	3
Scandinavian,	11	1	0	1	5	3	2	5	1	4
Other Foreign,	101	7	3	4	46	28	18	48	30	18
Unstated,	2	0	0	0	0	0	0	2	1	1
Nativity of Father.										
Total,	1,927	256	127	129	845	522	323	826	577	249
United States,	792	129	67	62	320	184	136	343	218	125
Ireland,	198	20	7	13	91	49	42	87	71	16
Germany,	137	11	4	7	47	32	15	79	59	20
Italy,	100	13	9	4	49	36	13	38	25	13
Hungary,	169	20	9	11	84	60	24	65	49	16
Russia,	260	24	13	11	138	90	48	98	74	24

Poland,	18	1	0	1	5	5	0	12	9	3
Scandinavian,	14	3	1	2	5	3	2	6	1	5
Other Foreign,	169	19	8	11	74	44	30	76	58	18
Unstated,	70	16	9	7	32	19	13	22	13	9
Nativity of Mother.										
Total,	1,927	256	127	129	845	522	323	826	577	249
United States,	821	132	66	66	342	193	149	347	238	109
Ireland,	207	19	9	10	84	53	31	104	75	29
Germany,	122	15	5	10	42	28	14	65	45	20
Italy,	98	12	8	4	49	37	12	37	24	13
Hungary,	169	21	10	11	83	58	25	65	49	16
Russia,	249	22	12	10	133	87	46	94	70	24
Poland,	21	2	0	2	5	5	0	14	11	3
Scandinavian,	16	4	2	2	6	3	3	6	1	5
Other Foreign,	154	16	10	6	69	40	29	69	46	23
Unstated,	70	13	5	8	32	18	14	25	18	7

TABLE VII.

COUNTY RESIDENCE OF PATIENTS TREATED.

County.	Discharged.	Remaining.	County.	Discharged.	Remaining.
Total,	1,927	986	Jefferson,	9	8
			Juniata,	3	5
			Lackawanna,	58	37
Adams,	1	1	Lancaster,	14	8
Allegheny,	114	73	Lawrence,	5	5
Armstrong,	4	2	Lebanon,	14	10
Beaver,	7	9	Lehigh,	14	8
Bedford,	4	1	Luzerne,	113	72
Berks,	15	9	Lycoming,	24	16
Blair,	19	1	McKean,	1	2
Bradford,	21	10	Mercer,	9	6
Bucks,	16	10	Mifflin,	5	1
Butler,	9	6	Monroe,	0	0
Cambria,	24	15	Montgomery,	19	5
Cameron,	1	0	Montour,	6	0
Carbon,	10	3	Northampton,	38	16
Centre,	1	0	Northumberland,	17	13
Chester,	21	10	Perry,	4	1
Clarion,	4	1	Pike,	0	1
Clearfield,	13	9	Potter,	2	2
Clinton,	6	3	Schuylkill,	42	11
Columbia,	7	5	Snyder,	1	2
Crawford,	3	2	Somerset,	6	1
Cumberland,	7	2	Sullivan,	1	0
Dauphin,	97	28	Susquehanna,	3	2
Delaware,	26	8	Tioga,	10	2
Elk,	6	4	Union,	3	0
Erie,	13	5	Venango,	10	4
Fayette,	13	10	Warren,	8	1
Forest,	0	0	Washington,	8	3
Franklin,	13	11	Wayne,	2	2
Fulton,	1	5	Westmoreland,	26	8
Greene,	1	6	Wyoming,	5	0
Huntingdon,	4	0	York,	24	28
Indiana,	3	1	Philadelphia,	939	468

TABLE VIII.

CASES UNDER TREATMENT LESS THAN THREE MONTHS.

Classification.	Sex.			App. Cured.		Arrested.		App. Arrested.		Improved.		Un-improved.		Dead.		Gained in Weight.		Av. Gain.	Weight Sta-tionary.		Loss in Weight.		Av. Loss.	Av. Hosp. Days.
	Total.	M.	F.	No.	P. C.	No.	P. C.	No.	P. C.	No.	P. C.	No.	P. C.	No.	P. C	No.	P. C.	Lbs.	No.	P. C.	No.	P. C.	Lbs.	
Total,	58	40	18	0	0.0	0	0.0	22	37.9	34	58.6	2	3.5	0	0.0	54	93.1	10.6	3	5.2	1	1.7	1.0	53.5
Incipient,	20	18	2	0	0.0	0	0.0	7	35.0	13	65.0	0	0.0	0	0.0	20	100.0	7.0	0	0.0	0	0.0	0.0	46.7
Mod. Advanced,	37	22	15	0	0.0	0	0.0	15	40.5	20	54.1	2	5.4	0	0.0	34	91.9	10.3	2	5.4	1	2.7	1.0	56.6
Far Advanced,	1	0	1	0	0.0	0	0.0	0	0.0	1	100.0	0	0.0	0	0.0	0	0.0	0.0	1	100.0	0	0.0	0.0	62.0

CASES UNDER TREATMENT FROM THREE TO SIX MONTHS.

Total,	127	67	60	0	0.0	9	7.1	96	75.6	18	14.2	3	2.3	1	0.8	120	94.5	14.6	0	0.0	7	5.5	8.5	126.8
Incipient,	33	15	18	0	0.0	7	21.2	23	69.7	3	9.1	0	0.0	0	0.0	32	97.0	14.0	0	0.0	1	3.0	10.0	130.8
Mod. Advanced,	75	40	35	0	0.0	2	2.7	63	84.0	9	12.0	1	1.3	0	0.0	72	96.0	16.1	0	0.0	3	4.0	3.7	124.7
Far Advanced,	19	12	7	0	0.0	0	0.0	10	52.6	6	31.6	2	10.5	1	5.3	16	84.2	11.1	0	0.0	3	15.8	12.0	128.3

CASES UNDER TREATMENT SIX MONTHS AND OVER.

Total,	108	59	49	12	11.1	6	5.6	69	63.9	9	8.3	8	7.4	4	3.7	97	89.8	16.5	4	3.7	7	6.5	13.9	302.7
Incipient,	22	9	13	5	22.7	2	9.1	12	54.6	3	13.6	0	0.0	0	0.0	22	100.0	13.2	0	0.0	0	0.0	0.0	290.6
Mod. Advanced,	70	42	28	7	10.0	4	5.7	48	68.6	5	7.1	4	5.7	2	2.9	63	90.0	16.0	4	5.7	3	4.3	18.6	298.7
Far Advanced,	16	8	8	0	0.0	0	0.0	9	56.3	1	6.2	4	25.0	2	12.5	12	75.0	11.4	0	0.0	4	25.0	10.8	336.5

TABLE IX.

SUMMARY OF RESULTS OBTAINED IN THE TREATMENT OF 12,074 CASES AT THE MONT ALTO SANATORIUM, 1907 TO 1914, INCLUSIVE.

		Total.	P. C.	White.	Black and Other.	Male.	Female.	Children (Under 15 years).	Single.	Married.
Total,		*12,074	*99.7	11,629	445	7,540	4,534	586	5,834	5,654
Incipient,	Total,	1,567	13.0	1,528	39	839	728	362	791	414
	Apparently cured,	261	16.6	254	7	117	144	109	113	39
	Arrested,	588	37.5	573	15	314	274	150	298	140
	Improved,	595	38.0	586	9	343	249	93	315	187
	Progressive,	120	7.7	112	8	59	61	10	64	46
	Dead,	3	0.2	3	0	3	0	0	1	2
Moderately Advanced,	Total,	4,711	39.0	4,581	130	2,863	1,848	178	2,164	2,369
	Apparently cured,	213	4.5	210	3	92	121	29	129	55
	Arrested,	1,428	30.3	1,401	27	797	631	82	712	634
	Improved,	2,078	44.1	2,012	63	1,328	750	61	834	1,183
	Progressive,	908	19.3	879	29	574	334	6	433	469
	Dead,	84	1.8	79	5	72	12	0	56	28
Far Advanced,	Total,	5,796	48.0	5,520	276	3,838	1,958	46	2,879	2,871
	Apparently cured,	19	0.3	18	1	13	6	1	12	6
	Arrested,	586	10.1	567	19	377	209	12	321	253
	Improved,	1,902	32.8	1,839	63	1,239	633	12	894	996
	Progressive,	2,241	38.7	2,148	93	1,438	803	12	1,070	1,159
	Dead,	1,048	18.1	948	100	771	277	9	582	457

*Thirty-four unclassified cases not included.

PENNSYLVANIA STATE SANATORIUM FOR TUBERCULOSIS NO. 2, CRESSON.

WILLIAM G. TURNBULL, M.D., *Medical Director.*

On January 1, 1915, there were 363 patients in the Cresson sanatorium remaining from the previous year, 187 males and 178 females. Sixty-three (or 17.4 per cent.) were classified as incipient, 140 (or 38.6 per cent.) as moderately advanced, and 160 (or 44 per cent.) as far advanced.

During the year 1915, 601 patients were admitted to the sanatorium, 291 males and 310 females. Sixty-eight (or 11.3 per cent.) of these were classified as incipient, 297 (or 49.4 per cent.) as moderately advanced, and 236 (or 39. 3 per cent.) as far advanced.

There were, therefore, 961 patients treated in the institution during the year, 131 (or 13.6 per cent.) incipient, 437 (or 45.3 per cent.) moderately advanced, and 396 (or 41.1 per cent.) far advanced.

The capacity of the institution varied somewhat during the year, due to the opening of tents during the summer. The average capacity was 368 and the average number of patients in the institution was 365.

During the year 609 patients were discharged from the institution. The average patient was 29.1 years of age, and came from a family of 5.2 members which lived in a house of 3.1 rooms and had a monthly income of $55.26. This average patient remained in the institution 177.1 days.

Of the 609 patients discharged during the year, 252 were discharged voluntarily, and 104 for failure to return from leave of absence, given at the end of four months' stay in the institution. One hundred and thirty-nine were discharged against advice, 33 were dismissed for infraction of rules, 2 deserted, and 79 died in the institution. Two (or .3 per cent.) were discharged as apparently cured, 80 (or 13.1 per cent.) as arrested, 105 (or 17.2 per cent..) as apparently arrested, 241 (or 39.6 per cent.) as improved, 102 (or 16.7 per cent.) as unimproved, and 79 (or 13 per cent.) died in the institution.

Seventy-eight of the patients discharged during the year were classified as incipient when admitted to the institution. The average age of these patients was 18.7 years, and the average length of stay was 205.9 days. One (or 1.3 per cent.) was discharged as apparently cured, 34 (or 43.6 per cent.) as arrested, 20 (or 25.6 per cent.) as

apparently arrested, 19 (or 24.4 per cent.) as improved, and 4 (or 5.1 per cent.) as unimproved.

Two hundred and seventy-five of the patients discharged were classified as moderately advanced on admission. The average age of these patients was 30.2 years, and the average length of stay was 174.1 days, one (or .4 per cent.) was discharged as apparently cured, 41 (or 14.9 per cent.) as apparently arrested, 134 (or 48.7 per cent.) as improved, 26 (or 9.5 per cent.) as unimproved, and 5 (or 1.8 per cent.) died in the institution.

Two hundred and fifty-six of the patients discharged were classified as far advanced when admitted to the institution. The average age of these was 31.1 years, and the average length of stay was 171.6 days. Five (or 2 per cent.) of these far advanced cases were discharged as arrested, 17 (or 6.6 per cent.) as apparently arrested cases, 88 (or 34.4 per cent.) as improved, 72 (or 28.1 per cent.) as unimproved, and 74 (or 28.9 per cent.) died in the institution.

It is gratifying to note that the average length of stay of patients in the institution has shown a decided increase over that of previous years. This has apparently been due to two factors:

1st—The better education of the patients, before coming to the institution, by dispensary physicians and,

2d—The greater effort that has been made in the institution to do away with the monotony of sanatorium life by providing harmless occupations and amusement.

During the summer a temporary amusement hall was built in the rear of the dining building, capable of seating two hundred and fifty persons. This was made possible by a gift of five hundred dollars by the Girls Society of the First Presbyterian Church of Pittsburgh, and by many smaller gifts from other friends of the institution. The moving picture machine purchased by the patients in 1914 was installed in this hall, and weekly moving picture entertainments have been given. In addition to this, the hall has been made a social center for the patients, and entertainments and social gatherings have been held in it at frequent intervals. These have been under the management of a social committee elected by the patients, and have done much to build up a spirit of contentment and cheer among the patients.

The open air school which was started for the children in 1914, has been continued and enlarged, a second building having been built during the year. The school has proved of great value to the children by interesting and educating them. It has proved of even greater value to the institution by improving the discipline and behavior of the children, and by training a group of teachers among our patients who are interested in the children and able to control them.

Of the 530 cases discharged alive during 1915, 239 (or 45.1 per cent.) were complicated by tuberculous laryngitis. The classification of the stage of the laryngitis, and the result of treatment, is as follows:

Incipient—115,	Arrested,	17
	Improved,	92
	Stationary,	4
	Progressive,	2
Moderately advanced—95,	Arrested,	6
	Improved,	81
	Stationary,	5
	Progressive,	3
Far advanced—29,	Arrested,	0
	Improved,	18
	Stationary,	1
	Progressive,	10

During the year the efficiency of the laboratory has been greatly increased. This has been due to the interest and activity of Dr. M. E. Cowen, who has been in charge of this department. This work has been done in spite of badly cramped quarters and insufficient equipment. It is hoped that, with the opening of the new wing, better quarters and more liberal equipment will be obtainable for this important branch of our work.

During the year, 4,669 specimens of sputum were examined, of which 1,554 were positive for tubercle bacilli and 3,115 were negative. The sputum examinations of the 609 cases discharged during the year resulted as follows:

Of 78 incipient cases 5 were positive for tubercle bacilli on first examination, 29 were positive on one or more later examinations, and 44 were never positive at any examination. Thus 43.6 per cent. of incipient cases showed positive sputum at some time during their stay in the institution, and 56.4 per cent. were persistently negative.

Of 275 moderately advanced cases, 87 were positive on first examination, 115 at one or more later examinations, and 73 were persistently negative. Thus 73.5 per cent. of moderately advanced cases showed positive sputum, and 26.5 per cent. failed to show tubercle bacilli at any time.

Of 256 far advanced cases, 170 were positive on first examination, 64 became positive at one or more later examinations, and 22 failed to show tubercle bacilli at any time. Thus 91.4 per cent. of far advanced cases showed tubercle bacilli in their sputum, and 8.6 per cent. were persistently negative.

All examinations for tubercle bacilli were made by staining by hot Carbol-Fuchsin, bleaching and counter staining with Gabbetts Solution. In cases of continued negative sputum the entire expectoration of the patient was collected for one or two days and diluted with an equal quantity of water. Fifteen drops of normal sodium

hydroxide solution was then added to each ounce of diluted sputum and the whole was boiled until a thin homogenous mass was produced. It was then contrifugalized and smears were made from the sediment. This method has proved the most successful of several that have been tried.

Secondary organisms were found in the sputum of the 609 discharged cases as follows:

Staphylococci in 203 specimens.
Streptococci in 2 specimens.
Diplococci in 252 specimens.
Unidentified bacilli in 179 specimens.

Secondary organisms were found with approximately twice the frequency in incipient and moderately advanced cases that they were in far advanced cases.

Two thousand eight hundred and two specimens of urine were examined during the year. Of the 78 incipient cases discharged, 13 showed albumin in the urine, and 9 showed casts. Of the 275 moderately advanced cases, 30 showed albumin, 16 showed casts, and 4 showed tubercle bacilli. Of the 256 far advanced cases, 43 showed albumin, 32 showed casts and 5 showed tubercle bacilli.

The number of urines showing tuberle bacilli would probably have been greater but for the fact that the routine examination for tubercle bacilli was not begun until July 15, 1915. At the present time all urines showing albumin are routinely examined for tubercle bacilli, the method used being a combination of the methods of Petroff and Garcia.

Seven hundred and thirty-seven blood counts were made during the year and 617 haemoglobin estimations. Seven hundred and thirty-two differential leucocyte counts were also made.

The blood counts have been of particular interest in that they have tended to refute the old teaching that tuberculosis did not give a leucocytosis. The average of the leucocyte counts has been about 12,000. The differential counts have impressed the importance of a high lymphocyte count in the diagnosis of tuberculosis.

The following tables summarize the results of the blood work during the year:—

ESTIMATES OF HAEMOGLOBIN, 617 EXAMINATIONS, DARE HAEMOGLOBINOMETER.

Class.	30-39%	40-49%	50-59%	60-69%	70-79%	80-89%	90-99%
Incipient,				2	9	26	23
Moderately advanced,		1	9	40	85	117	51
Far advanced,	1	5	36	68	85	53	16

LEUCOCYTE COUNTS, 737 EXAMINATIONS.

Class.	Below 5000	5000-10000	10000-15000	15000-20000	20000-25000	25000-30000	Over 30000
Incipient,	1	39	17	3			
Moderately advanced,	5	154	120	20	5		
Far advanced,	2	74	108	64	20	3	2

DIFFERENTIAL LEUCOCYTE COUNTS, 732: PERCENTAGE OF POLYMORPHONEUCLEAR NEUTROPHILES.

Class.	20-29%	30-39%	40-49%	50-59%	60-69%	70-79%	80-89%	90%
Incipient,		5	14	24	14	3		
Moderately advanced,	3	12	41	95	107	55	17	
Far advanced,		1	8	31	100	128	71	3

DIFFERENTIAL LEUCOCYTE COUNTS, 732: PERCENTAGE OF LYMPHOCYTES.

Class.	Below 10%	10-19%	20-29%	30-39%	40-49%	50-59%	Over 60%
Incipient,		4	8	24	12	8	4
Moderately advanced,	3	24	90	118	64	26	5
Far advanced,	11	111	131	63	19	4	

THE PROGNOSTIC VALUE OF THE UROCHROMOGEN REACTION IN PULMONARY TUBERCULOSIS.

BY M. E. COWEN, M.D.

Having had our interest thoroughly aroused by Dr. Schäffle's paper[1] on the comparison between the urochromogen and diazo tests in tuberculosis, and realizing our opportunity of doing some work along the same line, we made these two tests a part of the routine examination of every specimen of urine sent into the laboratory at Cresson State Sanatorium.

During the eight months ending October 15, 1915, we examined 1,805 specimens from 832 different patients, and the following detailed report is offered in the hope that it may be of interest to others.

1. Schäffle, Karl: A Comparison Between the Urochromogen and Diazo Tests in the Prognosis of Tuberculosis, The Journal A. M. A., Oct. 10, 1914, p. 1294.

The simplicity of the urchromogen test and its evident superiority over the diazo should recommend it to all who have charge of tuberculous patients. We have followed closely the technic of Weiss as quoted in Dr. Dr. Schäffle's paper. A small amount of fresh, liquid urine, diluted with water to three times its volume, is divided into equal portions in two test tubes, to one of which 3 drops of a 1: 1,000 solution of potassium permanganate are added. The other tube is used as a control.

Turbidity and the color of the urine appeared to have no effect on the reaction. We have regarded as positive only those in which a distinct canary yellow was produced and was found to be fairly permanent, remaining for from twenty-four to forty-eight hours in specimens kept under ordinary conditions of light and temperature for that particular purpose. Occasionally there occurs a faint yellow tinge which soon disappears and may be disregarded.

Of the 832 cases in this series, 424 were male and 408 female. Classified according to physical condition, 326 were far advanced, 399 moderately advanced and 107 incipient. The results are best shown by the accompanying table.

RESULTS OF THE TESTS.

Positive to both tests,	2
Negative to both tests,	741
Positive unrochromogen with negative diazo,	89
	832

Of the ninety-one patients with positive urochromogen reactions, forty-five were male and forty-six female; eighty-six were adults and five children, and seventy-eight far advanced and thirteen moderately advanced. For convenience I have grouped these cases according to different conditions as follows:

GROUP A.

This consits of forty-five patients, forty far advanced and five moderately advanced, who had a positive reaction on their admission to the sanatorium. Of these, twenty far advanced, eight male and twelve female, died in from one week to three months. In one female patient, moderately advanced, the reaction became negative ten days after admission, but she died within a month from complicating heart disease and ascites.

Twelve patients, seven male and five female, all far advanced, declined steadily and returned home. The reaction was still positive on discharge; all were very toxic, having considerable fever and losing weight.

One female patient, moderately advanced, went home after four months, the condition being much improved. The reaction was negative. She gained 14 pounds, and the temperature was from 99 to 100 on discharge.

Seven female patients, four far advanced and three moderately advanced, are still in the sanatorium, all negative, all gaining weight, two having normal temperature, and the others not above 100. One of them lost 6½ pounds in less than a month, all the while having an evening temperature of from 101 to 103 with a new area of cavity formation, a point which I wish to emphasize. After two months the temperature was seldom above 99, the urochromogen reaction was negative, and the patient had regained 5 pounds of the lost weight.

Three patients, one male and two female, all far advanced, are still at the sanatorium, failing rapidly, losing weight, and having evening temperatures of from 100 to 103 and continued positive urochromogen reactions.

One male patient, far advanced, left the sanatorium within a month and failed to send in a specimen for examination on discharge.

GROUP B.

This consists of fifteen patients, six male and nine female, who had negative reactions on admission but became positive within two months. Fourteen were far advanced and one moderately advanced.

Three of these, one male and two female, developed new cavity formation with rapid loss of weight and high fever, and died in less than two months after the first positive urochromogen reaction.

Nine patients, four male and five female, failed steadily and went home. They all showed loss of weight, beginning within a short period of time before the appearance of the positive reaction. In six of these there was a marked increase in the evening temperature even when it had been moderately high before, and in four cases there was a very marked increase in the number of tubercle bacilli in the sputum, the Gaffky scale being used for the purpose of comparison.

Two female patients, far advanced, gave evidence of new cavity formation shortly after the appearance of the positive reaction, with loss of weight and increased fever. Both are now negative, having gained weight and have only slight fever.

The moderately advanced patient also had a negative sputum on admission, but with the positive urchromogen reaction had a positive sputum and a loss of 1½ pounds in weight. Within a month he began to gain weight again, and sputum and urine have remained negative.

GROUP C.

This consists of sixteen patients, thirteen male and three female, old residents of the sanatorium who had positive reactions the first time their specimens were sent to the laboratory after these tests were begun. The examinations are made once in two months unless

positive for albumin, in which case the urine is examined every two weeks or oftener, according to the condition of the patient. Thirteen of these cases were far advanced, and three moderately advanced.

Six male patients, far advanced, died within from one week to three months. One moderately advanced male patient became despondent over his condition and committed suicide.

Two far advanced male patients and one moderately advanced female went home within two months after their first positive reaction. All had made slight gains in weight, and the general condition was somewhat improved. The reaction was negative on discharge.

One male and two female patients, all far advanced, went home, steadily declining and with reaction positive on discharge. The deaths of the two female patients have been reported.

Three male patients, two far advanced and one moderately advanced, are still in the sanatorium, failing rapidly, and have positive urochromogen reactions.

GROUP D.

This consists of fifteen patients, nine male and six female, old residents of the sanatorium, who were negative at the first time their specimens were examined but became positive at some time later. Eleven were far advanced, and four moderately advanced.

Six far advanced, three male and three female, died, one in six months and the others in less than three months after the first positive reaction.

One male patient, moderately advanced, developed tuberculous meningitis. The positive reaction appeared three days before his death.

Three male patients, two far advanced and one moderately advanced, are still in the sanatorium, all on the decline and having positive reactions.

One male and one female patient, both far advanced, went home failing, losing weight and having high irregular temperature. Both had positive reactions on discharge and both are reported dead.

One female patient, far advanced, is still in the sanatorium, negative, has gained several pounds in weight, and is having only moderate fever.

Two moderately advanced patients, one male and one female, went home. The male patient had a negative reaction, but a suspicious area of softening in the left upper lobe, and was losing weight steadily. His only positive reaction was eleven days previous to the negative discharge specimen. The female patient had been in the sanatorium six months and had gained 25 pounds. Ten days before her departure she began to have a higher temperature but did not lose weight. Her discharge specimen was positive.

Two of the cases in this group were especially interesting. The first, an adult female patient, far advanced, had a severe hemorrhage in February, which was followed by the expectoration of small amounts of fresh blood every day for two weeks. The urine was examined repeatedly during the next month, but was always negative, and hence the examinations were discontinued. The patient lost weight steadily, and had a continued moderately high evening temperature. A strongly positive reaction was present at the middle of May, two months after the last negative reaction, and the patient died suddenly, one week later.

The second was a girl, aged 12, far advanced, with cavity formation in both upper lobes and a marked cervical adenitis. The temperature was normal, the sputum positive and the urochromogen reaction negative in February. The patient was able to be up and about with the other children until the middle of April, when she became acutely ill. The temperature was from 101 to 102; there was rapid loss of weight with extension of lung involvment, the sputum was negative, the urochromogen reaction positive, and the enlarged cervical glands rapidly diminished in size. It did not seem possible that she could live more than a few days. Two weeks later, however, she was considerably improved, but still unable to be weighed. The temperature was lower, the glands enlarging again, and the sputum and urochromogen reaction negative.

June 10, after the patient had gained several pounds, it was noticed that she was once more losing weight and having an evening temperature of from 101 to 103. Examination revealed extended cavity formation with sputum and the urochromogen reaction positive. From then on she failed steadily and died in September; five months after the first positive reaction.

OTHER CASES.

During the eight months there were twenty-six other deaths than those previously mentioned, and I have looked over their charts in order to find in what respects they differed from those who had positive reactions. All were far advanced.

Two, who had been gaining slowly since their admission, and whose examinations had been negative, had sudden, large hemorrhages and died within a few minutes.

One developed a pneumothorax a month after admission and died two weeks later. There was a negative reaction one week before death.

Two, who had only slight activity, though far advanced, died of nephritis. Both were negative on several examinations, the last being within twenty-four hours of the death.

One patient died fifteen days after a severe hemorrhage. The urine was not examined.

One died eighteen days after admission. The reaction was negative when the patient was admitted, and the patient was not re-examined.

Two died from heart disease. These patients had repeated neg ative reactions till within three or four days before death.

One died four months after having a severe hemorrhage. This patient had two negative examinations, the last one five days before death.

Two were negative five weeks before death and were not re-examined.

Fourteen had not had these tests at all, owing to the fact that their specimens had not become due at the laboratory according to our schedule, and we were not then familiar with the conditions which we now consider as indicating a special examination, namely, loss of weight and increased activity. At present we examine all positive and even suspected cases at least once a week.

COMMENT.

Our failure to find more positive diazo reactions was due, I think, to an error in our method of doing the test, an error which has been corrected in our later work, but which unfortunately has rendered the present series of cases unavailable for accurate comparison. The method which we used at first was to add "a few drops" of the sodium nitrite solution to the mixed urine and sulphanilic hydrochloric solution, and that indefinite "few drops" was the cause of our downfall. On looking into the matter a little more closely I found in different books four different methods of performing the test, and the four varied in the amount of sodium nitrite solution used as well as the amount and manner of adding the ammonia. I give here the method which we found to give the best results and which we are now using in all cases:

Solution 1:

Sulphanic acid,	1 gm.
Strong hydrochloric acid,	50 c.c.
Water,	1,000 c.c.

Solution 2:

Sodium nitrite,	1 gm.
Water,	200 c.c.

These solutions are kept separate in tightly stoppered, dark colored bottles. For use, 5 c.c. urine and 5 c.c. Solution 1 are mixed in a test tube, 2 drops of Solution 2 added, and the mixture shaken until frothy. Then with a pipet having a rubber bulb, 1 c.c. ammonia is quickly added. The result, if positive, is a cherry red color in the body of the tube, while the foam assumes a lighter shade but is still reddish.

We do not mix Solutions 1 and 2 in a stock bottle on account of its rapid deterioration. We have found that one drop of Solution 2

in a known positive urine occasionally does produce the characteristic color, that 2 drops never failed, but 3 drops sometimes and 4 drops always spoiled the reaction. Similarly we found that adding the ammonia drop by drop till the mixture was alkaline did not produce the desired result. The ammonia must be in excess and added quickly. According to Wood's "Chemical Diagnosis," the administration of opium derivatives will inhibit the diazo reaction, and this has to be taken into consideration, for many of our patients with positive urochromogen have required such medication.

The administration of such drugs, however, does not appear to have any effect on the urochromogen reaction. Neither does it seem to be influenced by the diet of the patient. Filtering the urine makes no difference, nor does boiling. The latter fact led us to try the biuret test for peptone, with negative results.

Specimens from the same patient at different times of the day showed no variation in the reaction. At one time some quite marked differences in the intensity of the reaction led to an investigation of our permanganate solution which was found to have deteriorated and become unfit for use. Since then we have kept it in a dark colored bottle, made new solution once a month, and have had no more doubtful reactions.

None of the positive specimens were alkaline when examined. When rendered so by the addition of normal sodium hydroxid solution there was no apparent difference until the sodium hydroxid had been added to excess. Then the characteristic yellow failed to develop on addition of the permanganate solution, but was replaced by a dark blue which quickly disappeared.

Along with the positive urochromogen we have found a very excessive indican reaction.

From the physical findings in these reported cases, my conclusions are that the positive reaction in patients with pulmonary tuberculosis is present only when there is an actual destructive process going on. Occurring in an ambulant case we would regard it as a warning that the patient should be put at absolute rest in bed. In the moderately advanced case, we may expect soon to find evidence of cavity formation if the reaction remains positive. For the already far advanced case with cavity riddled lungs it is of grave significance. In 93 per cent. of our cases of this type the patients died within four months, and the majority of these within three months.

On the other hand, a continued negative reaction in a urine that previously has been positive appears to indicate at least a temporary cessation or retardation of activity.

We have had reason to be particularly grateful the past year to the friends of the institution. Not only at Christmas and Easter, but at all times during the year, they have supplied all the needs of the destitute among our patients, and have done much to add to the comfort and happiness of all.

The following is a list of friends from whom donations were received during the year:

P. S. C. S.

LIST OF DONATIONS RECEIVED DURING THE YEAR 1915.

Mrs. Cyrus Brown, Johnstown,	Croquet sets, baseball outfit and toys.
Mr. A. J. Bredin, Pittsburgh,	Books for children.
Mrs. J. M. Buck, Cresson,	Candy.
Balcony Corner Class, First Presbyterian Church, Johnstown.	Toys and useful clothing.
Westmont Sunday School Class, First Presbyterian Church, Johnstown.	Toys, sweaters, shoes, oranges and candy.
Curtis Publishing Company, Philadelphia,	Reprints and pitcures.
A. J. Cumberland, Butler,	Magazines.
Mrs. E. J. Cleave, Cresson,	Magazines and books.
Miss Georgeanna Carpenter, Wilkinsburg,	Dolls and toys.
Mrs. C. Campbell, Youngstown, Ohio,	Dolls, hair ribbons, kimona, games and toys.
Mrs. S. G. Dixon, Bryn Mawr,	Books, clothing, candy, toys.
Mrs. Delinger, Patton,	Magazines.
Mr. J. S. Dick, Ebensburg,	Clothing.
Mr. Howard Duganne, Crafton,	Games.
Mrs. James H. Ellis, Johnstown,	Shoes.
Mrs. Walter H. Fundenberg, Pittsburgh,	Oranges, dolls, games, gloves, mufflers.
Mrs. Moore Fredericks, Lock Haven,	Foot warmers.
Mr. L. B. Furry, Johnstown,	Oranges, clothing and toys.
Mr. Harry S. Given, Penn Traffic Co., Johnstown.	Books and material.
Mrs. Griffith, Pittsburgh,	Clothing and magazines.
Mr. David Griffith, Ebensburg,	Clothing.
Mrs. H. B. Garland, Jeannette,	Flowers (bulbs).
Miss Bertha Hodge, Harrisburg,	Scrap books for children, magazine cut-outs.
Mr. A. A. Hoerr, c o Wolf & Reynolds, Johnstown.	Shoes.
Mr. M. L. Hodgson, c o M. E. Church, Turtle Creek.	Literature.
Rev. W. H. Heinmiller, Pittsburgh,	Literature for German patients.
Mrs. H. Hayner, Social Service Society, Johnstown.	Shoes, stockings, etc.
Mrs. Hildebrand, Cresson,	Yarn.
Mrs. M. Hauser, Altoona,	Clothing.
Mrs. Hostetter, Cresson,	Clothing.
Rev. C. C. Hays, Pastor, First Presbyterian Church, Johnstown.	Sweaters, shoes and clothing of all sorts, elastic, yarn, candy.
Rev. C. C. Hays, Pastor, First Presbyterian Church, Johnstown.	Flags for children in outdoor drills.
Mrs. J. S. Helm, Cresson,	Gloves and stockings and other clothing.
First Presbyterian Church, Rev. J. S. Helm, Pastor., Cresson.	Organ.
Mr. J. B. Hoyt, Cresson,	Magazines.
Miss Lulu G. Harris, First Presbyterian Church, New Century Band, Pittsburgh.	$500.00 to be used for amusement hall.
Miss Maythorne Keeler, Johnstown,	Literature.
Mrs. A. J. Kelly, Jr., Pittsburgh,	Outing flannel, books, magazines.
Mr. F. J. Kammerer, Cresson,	Clothing, shoes, magazines.
Miss C. Kline, Greensburg,	Clothing.
Mrs. J. W. Leech, Ebensburg,	Magazines.
Mrs. C. L. Lyon, N. S., Pittsburgh,	Cards.
Mrs. Eugene Lowman, Cresson,	Yarn, literature.
Sr. M. Loyola, Mt. Aloysius Academy, Cresson,	Pictures.
Mrs. C. H. Metcalf, Sewickley,	Magazines.
Miss May Marshall, Blairsville,	Clothing.
Mrs. H. M. Potter, Cresson,	Magazines.
Parent Teacher Association, Johnstown,	Clothing, oranges, books and toys.
Mrs. George Patterson, Cresson,	Magazines.
Miss Ada Quartz, Cresson,	Candy.
Mrs. William Reed, Johnstown,	Clothing.
Mrs. Katherine Russell, Philadelphia,	Mittens.
Mrs. D. M. Ruffner, Cresson,	Yarn and clothing.
Dr. S. M. Rinehart, Pittsburgh,	Magazines, clothing, books.
"Rothstein's," Johnstown,	Bracelet watches for the little girls.
Mr. R. F. Rutledge, Johnstown,	Books.
Dr. Sidney Repplier, Philadelphia,	Clothing.
Mr. Blair C. Seeds, Cresson,	Oranges.
Miss Clara Sahrhage, Pittsburgh,	Dolls.
Miss M. Stewart, Indiana,	Dolls, games, toys and story books.

Rev. J. C. Steele, Export,	Magazines and books.
South Fork Supply Co., South Fork,	Magazines.
Mrs. Kate H. Stoddart, Philadelphia,	Books.
Mr. A. T. Schleich, Crafton,	Pajamas.
John Thomas & Sons, Johnstown,	Toys.
Mr. Henry Taylor, Cresson,	Magazines.
Mrs. Horace A. Tompkins, Ebensburg,	Woolen stockings.
Mrs. Daniel VanVoorhees, Morgantown, W. Va.,	Gingham, books, hair ribbons, gloves, etc.
Mrs. Van Scovoc, Cresson,	Yarn.
Miss Edna Wighaman, Cresson,	Clothing, shoes.
Mrs. Weldon, Pittsburgh,	Clothing.
Mrs. P. M. Wilson, Indiana,	Magazines.

Work has progressed during the year on the west wing addition under the Connor Brothers contract. The building is now under roof, and interior finishing and plastering is being done.

The sewer lines and the outside water lines to this addition, which were not included in the contract, have been put in by our workmen during the summer and fall, and are now ready for operation.

A tennis court for the use of employes was built below women's camp. An incinerator was built back of the power house, capable of incinerating all the waste from the institution. A wagon shed was built in the rear of the barn, and a lumber shed and carpenter shop in the rear of the power house.

The poultry farm has been enlarged during the year, a laying house to hold 1,000 hens having been added to the building built in 1914, and 12 new colony houses having been built. Approximately 2,000 chickens were raised during the year. The laying houses now hold about 2,220 pullets, and yearling hens, about two-thirds being white Leghorns, and one-third Rhode Island Reds.

Early in the spring hog cholera broke out in our hog farm and caused considerable loss in young pigs. Help was given us by the State Live Stock Sanitary Board, and the hogs were repeatedly immunized during the summer. By fall the outbreak was under control, and about 80 pigs born late in the summer were successfully raised. In spite of this outbreak, the hog farm has been a financial success during the year. It now contains 120 hogs and shoats.

The receipts from the farm and garden for the year were as follows:—

CHICKEN FARM:	
Eggs,	6,618 dozen.
Dressed chicken,	1,870 pounds.
Dressed Belgian hare,	158 pounds.
Dressed duck,	141 pounds.
Poultry manure for fertilizer,	36 tons.
PIG FARM:	
Dressed pork,	9,238 pounds.
SOAP FACTORY:	
Dried soap,	4,784 pounds.

GARDEN:

Radishes,	1,556 pounds.
Lettuce,	1,293 pounds.
Green onions,	6,563 pounds.
Tomatoes,	1,672 pounds.
Cucumbers,	1,695 pounds.
Rhubarb,	137 pounds.
Parsnips,	975 pounds.
Green corn,	3,153½ dozen.
Peas,	1,416 pounds.
Parsley,	130 pounds.
String beans,	3,395 pounds.
Turnips,	33,021 pounds.
Beets,	1,732 pounds.
Leeks,	127 pounds.
Carrots,	3,070 pounds.

FARM:

Cabbage,	36,445 pounds.
Pumpkins,	3,313 pounds.
Potatoes,	500 bushels.
Buckwheat,	64 bushels..
Oats,	190 bushels.
Oat straw,	5 1-3 tons.
Hay,	25 tons.

FOREST:

211,514 board feet rough lumber cut and sawed.

TABLE I.

RECORD OF PATIENTS ADMITTED AND DISCHARGED FROM CRESSON SANATORIUM—1915, ACCORDING TO SEX AND STAGE OF DISEASE.

		Total.	Incipient.	Per cent.	Moderately advanced.	Per cent.	Far advanced.	Per cent.
Patients on hand January 1, 1915,	Total,	363	63	17.4	140	38.6	160	44.0
	Male,	185	28	------	66	------	91	------
	Female,	178	35	------	74	------	69	------
Patients admitted during 1915,	Total,	601	68	11.3	297	49.4	236	39.3
	Male,	291	31	------	43	------	117	------
	Female,	310	37	------	154	------	119	------
Patients discharged during 1915,	Total,	609	78	12.8	275	45.2	256	42.0
	Male,	303	28	------	131	------	134	------
	Female,	306	40	------	144	------	122	------
Patients remaining December 31, 1915,	Total,	355	53	14.9	162	45.6	140	39.4
	Male,	173	21	------	78	------	74	------
	Female,	182	32	------	84	------	66	------
Patients treated during 1915,	Total,	964	131	13.6	437	45.3	396	41.1
	Male,	476	59	------	209	------	208	------
	Female,	488	72	------	228	------	188	------

TABLE II.

RECORD OF RESULTS OF TREATMENT ACCORDING TO STAGE OF DISEASE AND LENGTH OF STAY OF PATIENTS DISCHARGED, CRESSON SANATORIUM, 1915.

Admission Classification.	Discharge Classification.		Less than 3 Mos.	3-6 Mos.	6-9 Mos.	9-12 Mos.	12-18 Mos.	18-24 Mos.	More than 24 Mos.	Average Hospital Days.
Incipient Cases, 78,	Apparently cured,	1	0	0	0	1	0	0	0	330.6
	Arrested,	34	0	11	13	2	6	1	1	276.1
	Apparently arrested,	20	0	11	4	1	4	0	0	226.8
	Improved,	19	12	4	2	1	0	0	0	99.0
	Unimproved,	4	4	0	0	0	0	0	0	33.3
	Dead,	0	0	0	0	0	0	0	0	00.0
Moderately Advanced Cases, 275,	Apparently cured,	1	0	0	0	0	1	0	0	410.0
	Arrested,	41	1	12	17	5	6	0	1	260.3
	Apparently arrested,	68	4	37	12	7	7	1	0	202.5
	Improved,	134	51	59	15	3	4	1	1	130.1
	Unimproved,	26	11	8	3	0	3	1	0	151.7
	Dead,	5	1	0	1	1	1	1	0	324.2
Far Advanced Cases, 250,	Apparently cured,	0	0	0	6	0	0	0	0	0.6
	Arrested,	5	0	0	4	1	0	0	0	257.2
	Apparently arrested,	17	0	9	3	3	0	0	2	259.5
	Improved,	88	26	33	18	3	7	1	0	162.3
	Unimproved,	72	28	23	8	3	6	3	1	162.4
	Dead,	74	38	13	6	4	8	4	1	166.9

TABLE III.

RECORD OF RESULTS OF TREATMENT OF PATIENTS DISCHARGED ACCORDING TO AGE OF PATIENTS AND STAGE OF DISEASE, CRESSON SANATORIUM, 1915.

	Age periods.	Total.	Per cent.	Apparently cured.	Per cent.	Arrested.	Per cent.	Apparently arrested.	Per cent.	Improved.	Per cent.	Unimproved.	Per cent.	Dead.	Per cent.
Total,		609		2	.3	80	13.1	105	17.2	241	39.6	102	16.7	79	13.0
Total,		78	12.8	1	1.3	34	43.6	20	25.6	19	24.4	4	5.1	0	0.0
Incipient,	-15,	30	38.4	0	0.0	16	53.3	4	13.3	8	26.7	2	6.7	0	0.0
	15-24,	30	38.4	0	0.0	13	43.3	12	40.0	3	10.0	2	6.7	0	0.0
	25-34,	12	15.4	0	0.0	4	33.3	3	25.0	5	41.7	0	0.0	0	0.0
	35-44,	4	5.1	1	25.0	0	0.0	0	0.0	3	75.0	0	0.0	0	0.0
	45-54,	2	2.6	0	0.0	1	50.0	1	50.0	0	0.0	0	0.0	0	0.0
	55-plus,	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Moderately Advanced,	Total,	275	45.2	1	.4	41	14.9	68	24.7	134	48.7	26	9.5	5	1.8
	-15,	25	9.1	0	0.0	10	40.0	2	8.0	12	48.0	1	4.0	0	0.0
	15-24,	83	30.2	1	1.2	15	18.1	24	31.3	30	36.1	10	12.0	1	1.2
	25-34,	80	29.1	0	0.0	5	6.3	20	25.0	46	57.5	9	11.3	0	0.0
	35-44,	45	16.4	0	0.0	5	11.1	11	24.4	23	51.1	3	6.7	3	6.7
	45-54,	28	10.2	0	0.0	6	21.4	7	25.0	13	46.4	1	3.6	1	3.6
	55-plus,	14	5.1	0	0.0	0	0.0	2	14.3	10	71.4	2	14.3	0	0.0

TABLE III.—Continued.

	Age periods.	Total.	Per cent.	Apparently cured.	Per cent.	Arrested.	Per cent.	Apparently arrested.	Per cent.	Improved.	Per cent.	Unimproved.	Per cent.	Dead.	Per cent.
Total,		256	42.0	0	0.0	5	2.0	17	6.6	88	34.4	72	28.1	74	28.9
Far Advanced,	-15,	10	3.9	0	0.0	1	10.0	0	0.0	2	20.0	3	30.0	4	40.0
	15-24,	75	29.3	0	0.0	2	2.7	5	6.7	23	30.7	24	32.0	21	28.0
	25-34,	83	32.4	0	0.0	1	1.2	3	3.6	27	32.5	27	32.5	25	30.1
	35-44,	55	21.5	0	0.0	1	1.8	7	12.7	22	40.0	9	16.4	16	29.1
	45-54,	22	8.6	0	0.0	0	0.0	1	4.5	7	31.8	9	40.9	5	22.7
	55-plus,	11	4.3	0	0.0	0	0.0	1	9.1	7	63.6	0	0.0	3	27.3

TABLE IV.

RECORD OF PATIENTS DISCHARGED ACCORDING TO STAGE OF DISEASE, SEX, COLOR AND SOCIAL CONDITION, CRESSON SANATORIUM —1915.

		Total.	White.	Black and other.	Children.	Single.	Married.	Widowed.	Divorced.	Separated.
Total,		609	596	13	65	236	303	4	1	------
Incipient,	Total,	78	77	1	30	31	17	------	------	------
	Male,	38	37	1	17	15	6	------	------	------
	Female,	40	40	------	13	16	11	------	------	------
Moderately Advanced,	Total,	275	273	2	25	102	146	1	1	------
	Male,	131	130	1	16	44	71	------	------	------
	Female,	144	143	1	9	58	75	1	1	------
Far Advanced,	Total,	256	246	10	10	103	140	3	------	------
	Male,	134	127	7	2	59	71	2	------	------
	Female,	122	119	3	8	44	69	1	------	------

TABLE V.

SUMMARY OF RESULTS OF TREATMENT OF PATIENTS DISCHARGED FROM CRESSON SANATORIUM—1915.

Adm. Class.		Total.	P. C.	White.		Black and Other.		Children (Under 15 Years).		Single.		Married.	
				Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
	Dis. class.,	609		294	302	9	4	35	30	150	158	117	118
Incipient,	Total,	78	12.8	37	40	1		17	13	6	11	15	16
	Apparently cured,	1	1.3		1						1		
	Arrested,	31	40.6	15	18	1		16	6	1	2	5	10
	App. arrested,	20	25.6	10	10			1	3	3	1	6	6
	Improved,	19	24.4	11	8			6	2	2	6	3	
	Unimproved,	4	5.1	1	3				2		1	1	
	Dead,												
Moderately Advanced,	Total,	275	45.2	130	143	1	1	16	9	71	77	43	58
	Apparently cured,	1	.4	1								1	
	Arrested,	41	14.9	11	29		1	6	4	2	11	3	15
	App. arrested,	68	24.7	43	25			2		24	11	17	14
	Improved,	134	48.7	61	72	1		8	4	36	48	18	20
	Unimproved,	26	9.5	10	16				1	6	7	4	8
	Dead,	5	1.8	4	1					3			1

Total,	256	42.0	127	119	7	3	2	6	73	70	59	44										
Apparently cured,																						
Arrested,	5	2.0	1	3		1		1	1	1		2										
App. arrested,	17	6.6	11	6					7	4	4	2										
Improved,	88	34.4	45	41	2		1	1	27	28	19	12										
Unimproved,	72	28.1	34	38				3	17	19	17	16										
Dead,	74	28.9	36	31	5	2	1	3	21	18	19	12										

Far Advanced,

TABLE VI.

RECORD OF PATIENTS DISCHARGED ACCORDING TO STAGE OF DISEASE, SEX, NATIVITY AND PARENTAL NATIVITY, CRESSON SANATORIUM—1915.

	Total.	Incipient.			Moderately Advanced.			Far Advanced.		
		Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.
Total,	609	78	38	40	275	131	144	256	134	122
United States,	453	68	34	34	203	88	115	182	84	98
Ireland,	10	------	------	------	7	4	3	3	1	2
Germany,	11	------	------	------	3	1	2	8	6	2
Italy,	17	3	1	2	6	3	3	8	5	3
Hungary,	54	2	1	1	25	17	8	27	18	9
Russia,	24	3	1	2	12	7	5	9	8	1
Slavonia,	------	------	------	------	------	------	------	------	------	------
Poland,	6	------	------	------	3	1	2	3	2	1
Scandinavian,	4	------	------	------	1	1	------	3	2	1
Other foreign,	29	2	1	1	15	9	6	12	7	5
Unstated,	1	------	------	------	------	------	------	1	1	------
Nativity of Father.										
Total,	609	78	38	40	275	131	144	256	134	122
United States,	306	50	25	25	136	60	76	120	53	67
Ireland,	50	3	2	1	25	13	12	22	14	8
Germany,	56	5	3	2	24	9	15	27	14	13
Italy,	21	4	2	2	7	3	4	10	6	4
Hungary,	62	4	2	2	36	19	11	28	18	16
Russia,	31	4	1	3	17	11	6	10	8	2
Slavonia,	------	------	------	------	------	------	------	------	------	------
Poland,	4	------	------	------	1	------	1	3	2	1
Scandinavian,	8	1	------	1	4	3	1	3	3	------
Other foreign,	54	4	1	3	25	10	15	25	14	11
Unstated,	17	3	2	1	6	3	3	8	2	6
Nativity of Mother.										
Total,	609	78	38	40	275	131	144	256	134	122
United States,	310	51	26	25	138	62	76	121	52	69
Ireland,	38	2	2	------	19	8	11	17	9	8
Germany,	48	5	2	3	19	7	12	24	13	11
Italy,	21	4	2	2	7	3	4	10	6	4
Hungary,	60	4	2	2	29	18	11	27	17	10
Russia,	30	3	1	2	17	11	6	10	8	2

TABLE VI.—Continued.

	Total.	Incipient.			Moderately Advanced.			Far Advanced.		
		Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.
Slavonia,										
Poland,	4				1		1	3	2	1
Scandinavian,	10	1		1	4	3	1	5	3	2
Other foreign,	60	4	2	2	27	14	13	29	19	10
Unstated,	28	4	1	3	14	5	9	10	5	5

TABLE VII.
COUNTY RESIDENCE OF PATIENTS TREATED.

Counties.	Total discharges from Jan. 1, 1915, to Dec. 31, 1915, Inc.—609.	Total patients remaining Dec. 31, 1915—355.	Counties.	Total discharges from Jan. 1, 1915, to Dec. 31, 1915, Inc.—609.	Total patients remaining Dec. 31, 1915—355.
Adams,			Lackawanna,	1	
Allegheny,	258	156	Lancaster,	2	1
Armstrong,	13	3	Lawrence,	8	7
Beaver,	13	10	Lebanon,		1
Bedford,	5	2	Lehigh,	1	
Berks,			Luzerne,	10	1
Blair,	13	9	Lycoming,		1
Bradford,			McKean,	3	
Bucks,			Mercer,	19	7
Butler,	10	11	Mifflin,	2	1
Cambria,	65	38	Monroe,		
Cameron,			Montgomery,	1	1
Carbon,			Montour,		
Centre,	2	2	Northampton,		2
Chester,			Northumberland,		1
Clarion,	2	5	Perry,	1	
Clearfield,	15	10	Philadelphia,	8	7
Clinton,		1	Pike,		
Columbia,			Potter,		
Crawford,	1	3	Schuylkill,	1	1
Cumberland,			Snyder,		
Dauphin,	2		Somerset,	12	5
Delaware,			Sullivan,		
Elk,	3	2	Susquehanna,		
Erie,	6	4	Tioga,		
Fayette,	27	13	Union,		
Forest,	1	1	Venango,	6	2
Franklin,			Warren,	5	2
Fulton,			Washington,	25	14
Greene,	5	5	Wayne,		
Huntingdon,	8	3	Westmoreland,	44	13
Indiana,	5	4	Wyoming,		
Jefferson,	5	6	York,		
Juniata,	1				

TABLE VIII.

SUMMARY OF RESULTS OF TREATMENT OF PATIENTS WITH BIOLOGICAL PRODUCTS OF THE TUBERCLE BACILLUS, CRESSON SANATORIUM—1915.

CASES UNDER TREATMENT LESS THAN THREE MONTHS.

Classification.	Sex.			App. Cured.		Arrested.		App. Arrested.		Improved.		Unimproved.		Dead.		Gain in Weight.		Av. Gain.	Weight Stationary.		Loss in Weight.		Av. Loss.	Av. Hosp. Days.
	M.	F.	Total.	No.	P. C.	No.	P. C.	No.	P. C.	No.	P. C.	No.	P. C.	No.	P. C.	No.	P. C.	Lbs.	No.	P. C.	No.	P. C.	Lbs.	
Total,	25	9	34	------	------	------	------	3	8.8	30	88.2	1	2.6	------	------	33	97.1	8.3	------	------	1	2.9	1.0	57.1
Incipient,	2	3	5	------	------	------	------	------	------	5	100.0	------	------	------	------	5	100.0	10.6	------	------	------	------	------	56.8
Mod. Advanced,	21	5	26	------	------	------	------	3	11.5	22	84.6	1	3.8	------	------	25	96.2	8.2	------	------	1	3.8	1.0	59.7
Far Advanced,	2	1	3	------	------	------	------	------	------	3	100.0	------	------	------	------	3	100.0	5.0	------	------	------	------	------	36.3

CASES UNDER TREATMENT FROM THREE TO SIX MONTHS.

Total,	45	52	97	------	------	16	16.5	40	41.2	37	38.1	3	3.1	1	1.0	91	93.8	12.8	1	1.0	5	5.2	6.5	131.2
Incipient,	8	11	19	------	------	9	47.4	8	42.1	2	10.5	------	------	------	------	19	100.0	12.6	------	------	------	------	------	137.4
Mod. Advanced,	29	33	62	------	------	7	11.3	26	41.9	27	43.6	2	3.2	------	------	57	91.9	14.2	1	1.6	4	6.5	5.3	128.1
Far Advanced,	8	8	16	------	------	------	------	6	37.5	8	50.0	1	6.2	1	6.2	15	93.8	12.5	------	------	1	6.2	13	134.6

CASES UNDER TREATMENT SIX MONTHS AND OVER.

Total,	63	60	123	2	1.6	48	39.0	40	32.5	21	17.1	4	3.3	8	6.5	100	81.3	16.1	2	1.6	21	17.1	6.6	321.7
Incipient,	17	17	34	1	2.9	22	64.7	9	26.5	2	5.9	------	------	------	------	30	88.2	15.6	------	------	4	11.8	9.2	263.0
Mod. Advanced,	28	35	63	1	1.6	22	34.9	24	38.1	12	19.0	2	3.2	2	3.2	50	79.3	14.9	2	3.2	11	17.5	3.9	325.9
Far Advanced,	18	8	26	------	------	4	15.4	7	26.9	7	26.9	2	7.7	6	23.1	20	76.9	19.8	------	------	6	23.1	9.7	396.0

TABLE IX.

SUMMARY OF RESULTS OF TREATMENT OF PATIENTS DISCHARGED FROM CRESSON SANATORIUM, 1913 AND 1914, INCLUSIVE.

Adm. Class.		Total.	P. C.	White.	Black and Other.	Male.	Female.	Children (under 15)	Single.	Married.
	Disch. Class.,	1,316	.....	1,293	20	649	647	143	565	607
Incipient,	Total,	237	18.1	234	3	108	129	86	102	55
	Apparently cured,	25	10.6	25	.....	13	12	14	8	3
	Arrested,	132	55.7	130	2	60	72	54	52	26
	Improved,	74	31.0	73	1	33	41	12	39	23
	Progressive,	4	1.7	4	.....	1	3	.....	2	2
	Dead,	2	.8	2	.....	1	1	.....	1	1
Moderately Advanced,	Total,	461	35.0	454	7	223	238	47	215	199
	Apparently cured,	6	1.3	5	1	2	4	2	2	2
	Arrested,	153	33.2	151	2	69	84	27	72	54
	Improved,	234	51.0	231	3	117	117	17	103	114
	Progressive,	63	13.7	62	1	32	31	1	35	27
	Dead,	5	1.1	5	.....	3	2	.....	3	2
Far Advanced,	Total,	618	46.9	602	16	318	280	16	249	353
	Apparently cured,	3	.5	3	.....	2	1	1	.....	2
	Arrested,	44	7.1	44	.....	23	21	7	11	26
	Improved,	193	31.2	190	3	111	82	.....	72	121
	Progressive,	213	34.4	210	3	106	107	3	91	119
	Dead,	165	26.7	155	10	96	69	5	75	85

TABLE X.

RECORD OF DISCHARGED PATIENTS FROM CRESSON SANATORIUM IN 1915 ACCORDING TO OCCUPATION.

	Total.	Male.	Female.
Total,	609	303	306
Under occupational age and no occupations,	116	48	68
All occupations,	493	255	238
PROFESSIONAL GROUP,	9		
Architects, artists and teachers of arts,			
Clergymen,			
Engineers and surveyors,		6	
Journalists,		1	
Lawyers,		1	
Musicians and teachers of music,			
Physicians and surgeons,			
Teachers (school),		1	
Others of this class not specified,			
CLERICAL AND OFFICIAL GROUP,	23		
Bookkeepers, clerks and copyists,		21	
Bankers, brokers and officials of companies,			
Collectors, agents and auctioneers,		1	
Others of this class not specified,		1	
MERCANTILE AND TRADING GROUP,	12		
Apothecaries and pharmacists,			
Commercial travelers,		10	
Merchants and dealers,			
Hucksters and peddlers,		2	
Others of this class not specified,			
PUBLIC ENTERTAINMENT GROUP,	6		
Hotel and boarding house keepers,		1	
Saloon keepers, liquor dealers and bartenders,		4	
Others of this class not specified,		1	
PERSONAL SERVICE GROUP,	4		
Barbers and hairdressers,		3	
Janitors and sextons,			
Policemen, watchmen, detectives,			
Soldiers, sailors, marines,		1	
Others of this class not specified,			
LABORING AND SERVANT GROUP,	59		
Laborers (not agricultural),		57	
Servants,		2	
MANUFACTURING AND MECHANICAL INDUSTRY GROUP,	67		
Bakers and confectioners,		1	
Blacksmiths,		2	
Boot and shoe makers,		2	
Brewers, distillers, rectifiers,			
Butchers,			
Cabinet makers and upholsterers,		2	
Carpenters and joiners,		3	
Cigar makers and tobacco workers,		2	
Clock and watch repairers, jewelers,			
Compositors, printers, pressmen,		1	
Coopers,		1	
Engineers and firemen (not railway),		6	
Glass blowers and glass workers,		3	
Hat and cap makers,			
Iron and steel workers,		12	
Leather makers,			
Leather workers,			
Machinists,		6	
Marble and stone cutters,		3	
Masons,		3	
Mill and factory operators (textile),		3	
Millers (flour and grist),			

TABLE X.—Continued.

	Total.	Male.	Female.
Painters, glaziers,		3	
Plasterers,			
Plumbers, gas and steam fitters,		2	
Tailors,		2	
Tinners and tinware makers,		2	
Others of this class not specified,		8	
AGRICULTURAL AND TRANSPORTATION GROUP,	54		
Boatmen and canalmen,			
Draymen, hackmen, teamsters,		4	
Farmers, planters and farm laborers,		8	
Gardeners, florists and nurserymen,		1	
Livery stable keepers and hostlers,			
Lumbermen and raftsmen,		1	
Miners and quarrymen,		28	
Sailors, pilots and fishermen,			
Stock raisers, herders, drovers,			
Steam railroad employes,		9	
Others of this class not specified,		3	
All other male occupations,		20	
Artificial flower and paper box makers,			
Bookkeepers, clerks and copyists,			18
Cigar makers and tobacco workers,			2
Dressmakers and seamstresses,			4
Hotel and boarding house keepers,			3
Laundresses,			1
Milliners,			
Mill and factory operatives,			8
Musicians and teachers of music,			1
Nurses and midwives,			4
Servants,			24
Stenographers and typists,			7
Teachers in schools,			9
Telegraph and telephone operators,			3
All others,			8
Housewives,			146

PENNSYLVANIA STATE SANATORIUM FOR TUBERCULOSIS NO. 3, HAMBURG.

THOMAS H. A. STITES, M.D., *Medical Director.*

Grading was pushed vigorously during January, but cold weather stopped the work before its completion. This was again taken up in May and continued until the space close to the building had been finished except for cutting away the hill west of the west wing. Part of the space near the building was top-dressed and grass-sown.

Work was continued on the roads around the building.

In the late summer and fall we began to build cobble gutters. Thus far we have built our roadways by filling in with eight to twelve inches shale rock, surfaced by one-half to two inches of cinders.

In the spring many small trees and shrubs were transplanted from the woods. We also received several donations of trees and shrubs of various kinds. A list of these will be found in its proper place below.

In the spring we constructed a number of rustic summer houses and benches, which were distributed in shady places about the sanatorium grounds and greatly appreciated by the patients.

In the early spring twenty-one young pigs were purchased at a cost of one hundred dollars. At the end of the year our record showed five fat hogs slaughtered, the dressed weight being fifteen hundred and eighty-five pounds, with fifteen hogs and seventy-seven young pigs remaining, one sow having been killed accidentally. The swine were fed on the sanatorium waste and the wages of the swineherd amounted to less than the cost of burying garbage; therefore, we believe that the venture has been profitable. At present our swine are of common stock with the exception of one boar and two sows, which are thoroughbred Yorkshires. We shall gradually replace the grade stock with thoroughbreds.

The farm in general was successfully conducted. Our crops included sweet corn for ourselves and a number of shipments to both the sanatoria at Mont Alto and Cresson, several hundred bushels of turnips, several hundred heads of cabbage, about twenty-five bushels of popping corn, about five thousand bushels of potatoes, twelve hundred bushels of wheat, one thousand bushels of field corn on the cob, and one hundred and fifty tons of hay.

The following celebrations were held during the year:

On February 18, in the presence of patients assembled about our newly erected flag pole, a large national flag was displayed for the first time.

Easter was celebrated by floral decorations and special services by representatives of the various churches.

On April 15, the anniversary of the death of President Lincoln, the flag was displayed at half mast in accordance with the general request of the President of the United States. The significance of this display was explained to the patients.

At the annual King Frost Celebration in Hamburg, on October 30, the sanatorium won three prizes:— A first prize for the best six-horse team, a first prize for the best farm float, and a special prize was awarded to the turnout representing woman suffrage.

Christmas was celebrated throughout the institution and was made a thoroughly enjoyable occasion by the cooperation of the entire staff and all those patients who were physically fit to take part. Donations of confectionery, clothing and numerous other articles were received from outside and were greatly appreciated. Mr. and Mrs. Santa Claus arrived in time to distribute gifts on Christmas Eve, and on Christmas Day the patients were made happy by a chicken dinner. A telegram received from Dr. Dixon in the afternoon was read at supper time and this expression of his good wishes was a fitting close to a generally happy day. Every patient in the house received some remembrance.

The people of Hamburg have established the custom of community flower boxes, where those having flowers which they desire to send to the sanatorium place them on two mornings of the week.

In the general report of the Commissioner may be found a full list of the staff of the sanatorium and of all the persons variously employed in its service during the year.

Below appears in tabular form much information concerning the patients treated in the past year, especially with reference to admission and discharge, the contributory causes of death, and the operations which it became necessary to perform. In certain tables the results of treatment are also presented.

TABLE I.

*MOVEMENT OF PATIENTS ACCORDING TO SEX AND STAGE OF DISEASE.

		Total.	Incipient.	P. C.	Moderately Advanced.	P. C.	Far Advanced.	P. C.
Patients on hand January 1, 1915,	Total,	457	----------	------	240	52.5	217	47.5
	Male,	324	----------	------	169	------	155	------
	Female,	133	----------	------	71	------	62	------
*Patients admitted,	Total,	1,328	12	.9	347	26.1	969	73.0
	Male,	925	5	------	210	------	710	------
	Female,	403	7	------	137	------	259	------
*Patients discharged,	Total,	1,311	11	.8	420	32.0	880	67.1
	Male,	924	5	------	279	------	640	------
	Female,	387	6	------	141	------	240	------
Patients reamining December 31, 1915,	Total,	474	1	.2	167	35.2	306	64.6
	Male,	325	----------	------	100	------	225	------
	Female,	149	1	------	67	------	81	------
Patients treated during 1915,	Total,	1,785	12	.7	587	32.9	1,186	66.4
	Male,	1,249	5	------	379	------	865	------
	Female,	536	7	------	208	------	321	------

*Eleven unclassified cases not included.

TABLE II.

†RECORD OF RESULTS OF TREATMENT ACCORDING TO STAGE OF DISEASE AND LENGTH OF STAY.

Admission Classification.	Discharge Classification.	Total.	P. C.	Less than 3 Mos.	3-6 Mos.	6-9 Mos.	9-12 Mos.	12-18 Mos.	18-24 Mos.	More than 24 Mos.	Average Hospital Days.
Total,		1,311		706	453	108	38	6			93.5
Incipient Cases,	Total,	11		7	3						
	Apparently cured,										
	Arrested,										
	Apparently arrested,	2	18.1	*1	*1						100.0
	Improved,	8	72.7	5	2	1					73.4
	Unimproved,	1	9.0	1							5.0
	Dead,										
							Mos.	Mos.	Mos.	Mos.	Days.
Moderately Advanced Cases,	Total,	420		173	168	53	22	4			
	Apparently cured,										
	Arrested,	4	.9			3	1				183.0
	Apparently arrested,	38	9.0	3	28	5	1	1			146.6
	Improved,	280	66.6	119	105	33	20	3			120.3
	Unimproved,	90	21.4	47	31	12					82.4
	Dead,	8	1.9	4	4						110.8

TABLE II.—Continued.

Admission Classification.	Discharge Classification.	Total.	P. C.	Less than 3 Mos.	3-6 Mos.	6-9 Mos.	9-12 Mos.	12-18 Mos.	18-24 Mos.	More than 24 Mos.	Average Hospital Days.
Far Advanced Cases.	Total,	880		526	282	54	16	2			
	Apparently cured,										
	Arrested,	1	.1			1					265.0
	Apparently arrested,										
	Improved,	257	29.2	113	114	22	7	1			102.7
	Unimproved,	344	39.0	219	103	18	4				76.2
	Dead,	278	30.4	194	65	13	5	1			74.2

†Eleven unclassified cases not included.
*Admitted as employes—disease apparently arrested on admission.

TABLE III.

*RECORD OF RESULT OF TREATMENT ACCORDING TO AGE AND STAGE OF DISEASE.

	Age Periods.	Total.	P. C.	Apparently Cured.	P. C.	Arrested.	P. C.	Apparently Arrested.	P. C.	Improved.	P. C.	Unimproved.	P. C.	Dead.	P. C.
Total,		1,311				5	.3	10	.7	545	41.6	435	33.2	286	21.8
Total,		11	.8					2	18.2	8	72.7	1	9.1		
Incipient Cases,	-15														
	15-24	7	63.6					2	28.6	4	57.1	1	14.3		
	25-34	1	9.1							1	100.0				
	35-44	2	18.2												
	45-54	1	9.1							1	100.0				
	55-														
Total,		420	32.0			4	1.0	38	9.0	280	66.7	90	21.4	8	1.9
Moderately Advanced Cases,	-15	7	1.7					3	42.8	3	42.8	1	14.3		
	15-24	139	33.1			1	.7	13	9.3	88	63.3	34	24.5	3	2.2
	25-34	142	33.8			2	1.4	13	9.2	93	65.5	34	23.9		
	35-44	91	21.7			1	1.1	8	8.8	61	67.0	19	20.9	2	2.2
	45-54	33	7.8					1	3.0	30	90.9	1	3.0	1	3.0
	55-	8	1.9							5	62.5	1	12.5	2	25.0

TABLE III.—Continued.

	Age Periods.	Total.	P. C.	Apparently Cured.	P. C.	Arrested.	P. C.	Apparently Arrested.	P. C.	Improved.	P. C.	Unimproved.	P. C.	Dead.	P. C.
Total,		880	67.1			1	.1			257	29.2	344	39.1	278	31.6
Far Advanced Cases,	-15	6	.7							1	16.7	3	50.0	2	33.3
	15-24	253	28.7			1	.4			54	21.3	127	50.2	71	28.1
	25-34	285	32.4							76	26.7	113	39.6	96	33.7
	35-44	200	22.7							71	35.5	58	29.0	71	35.5
	45-54	94	10.7							40	42.6	26	27.7	28	29.8
	55-	42	4.8							15	35.7	17	40.4	10	23.8

*Eleven unclassified cases not included.

Average age—All classes, ---------- 31.4 yrs.
Incipient, ---------- 24.2 yrs.
Moderately advanced, ------ 29.2 yrs.
Far advanced, ---------- 32.5 yrs.

TABLE IV

*RECORD OF PATIENTS DISCHARGED ACCORDING TO STAGE OF DISEASE, SEX, COLOR AND SOCIAL CONDITIONS.

		Total.	White	Other.	Children Under 15 Years.	Single.	Married.	Widowed.	Divorced.	Separated.
Total,		1,311	1,243	68	13	561	671	48	2	16
Incipient,	Total,	11	11			9	2			
	Male,	5	5			4	1			
	Female,	6	6			5	1			
Moderately Advanced,	Total,	420	402	18	7	178	212	16	1	6
	Male,	279	264	15	3	126	139	8		3
	Female,	141	138	3	4	52	73	8	1	3
Far Advanced,	Total,	880	830	50	6	374	457	32	1	10
	Male,	640	610	30	2	286	324	17	1	10
	Female,	240	220	20	4	88	133	15		

*Eleven unclassified cases not included.

TABLE V.

*RECORD OF RESULT OF TREATMENT ACCORDING TO STAGE OF DISEASE, SEX, COLOR AND CIVIL CONDITION.

		Total.	P. C.	White.		Other.		Children Under 15 Years.		Married.		Single.	
				Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
Total,		1,324		879	364	35	23	5	8	543	224	336	145
Incipient,	Total,	11	.8	5	6					1	1	4	5
	Apparently cured,												
	Arrested,												
	Apparently arrested,	2	18.2	1	1							1	1
	Improved,	8	72.7	4	4					1	1	3	3
	Unimproved,	1	9.1		1								1
	Dead,												
Moderately Advanced,	Total,	420	32.1	264	138	15	3	3	4	150	85	126	52
	Apparently cured,												
	Arrested,	4	1.0	2	1		1			1	1	1	1
	Apparently arrested,	38	9.0	17	16	5		2	1	8	7	12	8
	Improved,	280	66.7	187	86	6	1		3	106	56	87	28
	Unimproved,	90	21.4	53	33	4		1		32	19	24	14
	Dead,	8	1.9	5	2		1			3	2	2	1

	Total,	880	67.1	610	220	30	20	2	4	352	148	286	88
	Apparently cured,												
Far Advanced,	Arrested,	1	.1	1								1	
	Apparently arrested,												
	Improved,	257	29.2	192	57	5	3		1	123	42	74	17
	Unimproved,	344	39.1	229	105	5	5	2	1	128	65	104	44
	Dead,	278	31.6	188	58	20	12		2	101	41	107	27

*Eleven unclassified cases not included.

TABLE VI.

*RECORD OF PATIENTS DISCHARGED ACCORDING TO STAGE OF DISEASE, SEX, NATIVITY AND PARENTAL NATIVITY.

		Incipient.			Moderately Advanced.			Far Advanced.		
	Total.	Total.	Male.	Female.	Total.	Male.	Female.	Total.	Male.	Female.
Total,	1,311	11	5	6	420	279	141	880	640	240
United States,	901	11	5	6	293	194	99	597	412	185
Ireland,	43				15	9	6	28	21	7
Germany,	20				8	4	4	12	11	1
Italy,	43				13	11	2	30	24	6
Hungary,	139				35	21	14	104	85	19
Russia,	79				31	23	8	48	39	9
Poland,	13				2	2		11	8	3
Scandinavian,	6				2	1	1	4	4	
Other foreign,	66				21	14	7	45	35	10
Unstated,	1							1	1	
Nativity of Father.										
Total,	1,311	11	5	6	420	279	141	880	640	240
United States,	529	7	2	5	164	108	56	358	250	108
Ireland,	163				58	38	20	105	77	28
Germany,	93				28	19	9	65	51	14
Italy,	64	1	1		21	16	5	42	31	11
Hungary,	156				40	25	15	116	94	22

Russia,	88				56	28	8	52	42	10
Poland,	16				4	3	1	12	9	3
Scandinavian,	11				3	2	1	8	6	2
Other foreign,	146	1	1		55	32	23	90	67	23
Unstated,	45	2	1	1	11	8	3	32	13	19
Nativity of Mother.										
Total,	1,311	11	5	6	420	279	141	880	640	240
United States,	565	6	2	4	176	115	61	383	263	120
Ireland,	165	1	1		58	38	20	106	78	28
Germany,	70				22	15	7	48	36	12
Italy,	64	1	1		20	16	4	43	32	11
Hungary,	155				39	24	15	116	92	24
Russia,	88				36	28	8	52	42	10
Poland,	17				5	4	1	12	9	3
Scandinavian,	8				3	2	1	5	5	
Other foreign,	136	2	1	1	51	30	21	83	63	20
Unstated,	43	1		1	10	7	3	32	20	12

*Eleven unclassified cases not included.

TABLE VII.

COUNTY RESIDENCE OF PATIENTS TREATED.

County.	Discharged.	Remaining.
Total,	1,311	474
Adams,	1	0
Allegheny,	98	35
Armstrong,	7	3
Beaver,	8	1
Bedford,	4	0
Berks,	33	15
Blair,	14	0
Bradford,	7	2
Bucks,	8	2
Butler,	10	0
Cambria,	18	7
Cameron,	1	0
Carbon,	7	0
Centre,	1	0
Chester,	23	8
Clarion,	2	2
Clearfield,	7	1
Clinton,	2	0
Columbia,	1	2
Crawford,	2	0
Cumberland,	2	0
Dauphin,	54	23
Delaware,	33	12
Elk,	5	1
Erie,	6	2
Fayette,	18	4
Forest,	0	0
Franklin,	1	0
Fulton,	0	0
Greene,	1	1
Huntingdon,	4	1
Indiana,	7	2
Jefferson,	9	2
Juniata,	1	0
Lackawanna,	54	27
Lancaster,	17	4
Lawrence,	11	1
Lebanon,	7	1
Lehigh,	21	12
Luzerne,	74	39
Lycoming,	3	1
McKean,	3	3
Mercer,	3	1
Mifflin,	0	1
Monroe,	1	0
Montgomery,	31	13
Montour,	4	2
Northampton,	47	17
Northumberland,	23	11
Perry,	1	1
Philadelphia,	513	175
Pike,	1	0
Potter,	1	0
Schuylkill,	46	27
Snyder,	1	0
Somerset,	2	0
Sullivan,	0	0
Susquehanna,	6	1
Tioga,	2	0
Union,	3	0
Venango,	4	0
Warren,	2	0
Washington,	8	6
Wayne,	0	0
Westmoreland,	15	3
Wyoming,	2	1
York,	10	1

Eleven unclassified cases not included.

TABLE VIII.

RECORD OF THE RESULT OBTAINED IN CASES TREATED WITH THE BIOLOGICAL PRODUCTS OF THE TUBERCLE BACILLUS.

CASES UNDER TREATMENT LESS THAN THREE MONTHS.

Class.	Sex.			Apparently Cured.		Arrested.		Apparently Arrested.		Improved.		Unimproved		Dead.		Gained Weight.		Av. Gain.	Weight Stationary.		Lost Weight.		Av. Loss.	Av. Hospital Days
	M.	F.	T.	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	Lbs.	No.	%	No.	%	Lbs.	
Total,	2		2							1	50.0	1	50.0			1	50.0	15			1	50.0	15	73.0
Incipient,																								
Moderately Advanced	1		1							1	100.0					1	100.0	15						70.0
Far Advanced,	1		1									1	100.0								1	100.0	15	76.0

CASES UNDER TREATMENT FROM THREE TO SIX MONTHS.

Total,	18	6	24			1	4.2	4	16.6	17	70.8	1	4.2	1	4.2	23	95.8	14.6	1	4.2				128.3
Incipient,																								
Moderately Advanced	11	4	15			1	6.6	4	26.7	9	60.0	1	6.6			15	100.0	17.1						148.0
Far Advanced,	7	2	9							8	88.9			1	11.1	8	88.9	11.9	1	11.1				111.1

CASES UNDER TREATMENT SIX MONTHS AND OVER.

Total,	5	1	6					1	16.7	5	83.3					6	100.0	19.3						255.2
Incipient,																								
Moderately Advanced	5	1	6					1	16.7	5	83.3					6	100.0	19.3						255.2
Far Advanced,																								

TABLE IX.

*SUMMARY OF RESULTS OF TREATMENT OF 97 CASES DISCHARGED FROM THE HAMBURG STATE SANATORIUM, INCLUDING DECEMBER 31, 1914.

		Total.	Per cent.	White.	Other.	Children under 15 years.	Male.	Female.	Married.	Single.
Total,		*97		95	2		75	22	49	48
Incipient,	Total,	4	4.1	4	0		2	2	1	3
	Apparently cured,									
	Arrested,									
	Improved,	2	50.0	2			1	1		2
	Progressive	2	50.0	2			1	1	1	1
	Dead,									
Moderately Advanced,	Total,	46	47.4	45	1		38	8	22	24
	Apparently cured,									
	Arrested,	1	2.2	1			1			1
	Improved,	31	60.9	30	1		25	6	16	15
	Progressive,	11	23.9	11	0		10	1	4	7
	Dead,	3	13.0	3			2	1	2	1
Far Advanced,	Total,	47	48.5	46	1		35	12	26	21
	Apparently cured,									
	Arrested,									
	Improved,	17	36.2	17	0		14	3	12	5
	Progressive,	10	21.3	10			7	3	5	5
	Dead,	20	42.5	19	1		14	6	9	11

*Two unclassified cases not included.

TABLE IX—A.

*SUMMARY OF RESULTS OF TREATMENT OF 1,311 CASES DISCHARGED DURING THE YEAR 1915.

		Total.	Per cent.	White.	Other.	Children under 15 years.	Male.	Female.	Married.	Single.
Total,		*1,311		1,243	68	13	924	387	737	561
Incipient,	Total,	11	.8	11			5	6	2	9
	Apparently cured,									
	Arrested,									
	Apparently arrested	2	18.2	2			1	1		2
	Improved,	8	72.7	8			4	4	2	6
	Unimproved,	1	9.1	1				1		1
	Dead,									
Moderately Advanced,	Total,	420	32.1	402	18	7	279	141	235	178
	Apparently cured,									
	Arrested,	4	1.0	3	1		2	2	2	2
	Apparently arrested	38	9.0	33	5	3	22	16	15	20
	Improved,	280	66.7	273	7	3	193	87	162	115
	Unimproved,	90	21.4	86	4	1	57	33	51	38
	Dead,	8	1.9	7	1		5	3	5	3
Far Advanced,	Total,	880	67.1	830	50	6	640	240	500	374
	Apparently cured,									
	Arrested,	1	.1	1			1			1
	Apparently arrested									
	Improved,	257	29.2	249	8	1	197	60	165	91
	Unimproved,	344	39.1	334	10	3	234	110	193	148
	Dead,	278	31.6	246	32	2	208	70	142	134

*Eleven unclassified cases not included.

CONTRIBUTING CAUSES OF DEATH AT THE HAMBURG SANATORIUM IN 1915.

Abscess, pulmonary,	1
Asthma, cardiac,	3
Acute cardiac dilatation,	9
Acute military tuberculosis (general),	2
Delirium tremens,	1
Diabetes,	3
Embolism,	1
Empyema,	3
Endocarditis,	16
Endocarditis with acute dilation and tuberculous laryngitis,	1
Enteritis, tuberculous,	12
Enteritis, tuberculous and stomatitis,	1
Enteritis, tuberculous with endocarditis,	2
Gangrenous stomatitis,	1
Haemorrhage, pulmonary (terminal),	4
Hepatitis,	1
Laryngitis, tuberculous,	93
Laryngitis, tuberculous and tuberculous enteritis,	6
Laryngitis, tuberculous and endocarditis,	5
Laryngitis, tuberculous and nephritis,	2
Laryngitis, tuberculous and pneumothorax,	1
Laryngitis, tuberculous and otitis media,	1
Meningitis, tuberculous,	12
Meningitis, tuberculous and tuberculous laryngitis,	2
Meningitis, tuberculous with optic neuritis,	1
Multiple arthritic synovitis,	1
Nephritis,	3
Oedema of larynx,	1
Osteomyelitis of both hips,	1
Pericarditis,	1
Peritonitis, tuberculous,	2
Penumonia, tuberculous,	1
Pneumothorax,	1
Postoperative shock—(intussusceptio ilei),	1
No Complications,	90

OPERATIONS AT THE HAMBURG SANATORIUM IN 1915.

MAJOR.

Under Ether.		Under Local Anaesthesia—Novocaine.	
Appendectomy,	3	Larparotomy exploratory,	1
Intestinal resection and anastomosis,	1		
Herniotomy,	1		
Herniotomy with ligation and excision of haemorrhoids,	1		

MINOR.

Tonsillectomy,	3	Tonsillectomy,	1
Castration,	4	Curettage of toe,	2
Resection of ribs,	2	Amputation of finger,	1
		Varicocele—excision,	1

OCCUPATIONS OF PATIENTS DISCHARGED FROM THE HAMBURG SANATORIUM IN 1915.

MALE.

PROFESSIONAL GROUP,		9
Clergyman,	1	
Lawyer,	1	
Musicians, teachers of music,	5	
Physician and surgeon,	1	
Others of this class not specified,	1	
CLERICAL AND OFFICIAL GROUP,		64
Bookkeepers, clerks and copyists,	50	
Collectors, agents and auctioneers,	4	
Others of this class not specified,	10	
MERCANTILE AND TRADING GROUP,		39
Apothecaries and pharmacists,	3	
Commercial travelers,	24	
Merchants and dealers,	4	
Hucksters and peddlers,	8	
PUBLIC ENTERTAINMENT GROUP,		9
Hotel and boarding house keepers,	1	
Saloon keepers, liquor dealers and bartenders,	7	
Others of this class not specified,	1	
PERSONAL SERVICE GROUP,		23
Barbers and hairdressers,	8	
Janitors and sextons,	2	
Policemen, watchmen, detectives,	4	
Soldiers, sailors, marines,	6	
Others of this class not specified,	3	
LABORING AND SERVANT GROUP,		181
Laborers (not agricultural),	158	
Servants,	23	
MANUFACTURING AND MECHANICAL INDUSTRY GROUP,		322
Bakers and confectioners,	10	
Blacksmiths,	3	
Boot and shoe makers,	12	
Butchers,	9	
Cabinet makers and upholsterers,	9	
Carpenters and joiners,	15	
Cigar makers and tobacco workers,	3	
Clock and watch repairers, jewelers,	2	
Compositors, printers, pressmen,	11	
Coopers,	7	
Engineers and firemen (not railway),	8	
Glass blowers and glass workers,	4	
Hat and cap makers,	5	
Iron and steel workers,	62	
Leather makers,	3	
Leather workers,	5	
Machinists,	33	
Marble and stone cutters,	8	
Masons,	2	
Mill and factory operators (textile),	31	
Painters, glaziers,	15	
Plasterers,	2	
Plumbers, gas and steam fitters,	5	
Tailors,	19	
Tinners and tinware makers,	4	
Others of this class not specified,	35	

AGRICULTURAL AND TRANSPORTATION GROUP,		180
Draymen, hackmen, teamsters,	39	
Farmers, planters and farm laborers,	21	
Gardeners, florists and nurserymen,	5	
Livery stable keepers, hostlers,	3	
Miners and quarrymen,	60	
Steam railroad employes,	25	
Others of this class not specified,	27	
All other male occupations,		76
Under occupational age,		5
No occupation,		16

FEMALE.

Artificial flower and paper box makers,	2	
Bookkeepers, clerks and copyists,	12	
Cigar makers and tobacco workers,	5	
Dressmakers and seamstresses,	13	
Hotel and boarding house keepers,	21	
Laundresses,	4	
Mill and factory operatives,	36	
Musicians and teachers of music,	1	
Nurses and midwives,	2	
Servants,	39	
Stenographers and typists,	6	
Teachers in schools,	6	
Telegraph and telephone operators,	3	
All others,	21	
Housewives,	180	
Under occupational age,		8
No occupation,		28

The ten hundred and twenty-five living patients discharged showed the following changes of weight:—

	Total.	Gain.	Loss.	Station-ary.	Average Gain. Lbs.
ADULTS.					
Total,	1,014	645	256	113	
Incipient,	11	9	1	1	7.9
Moderately advanced,	405	326	50	29	8.1
Far advanced,	598	310	205	83	9.3
CHILDREN.					
Total,	11	8	3		
Incipient,					
Moderately advanced,	7	7			8.7
Far advanced,	4	1	3		4.0

REASONS FOR DISCHARGE.

Total,		1,322
Voluntary,	284	
Against advice,	513	
Dismissed (infraction of rules),	58	
Failed to return from leave of absence,	135	
*Deserted,	39	
Removed by request,	2	
Transferred to Mont Alto,	3	
Transferred to Cresson,	2	
Dead,	286	

*This includes eleven unclassified cases.

The record of the number of persons in the families of patients discharged and the monthly income of such families is as follows:—

Number in Family.		Usual Monthly Income.	
No record,	88	No record,	18
1 in family,	15	No income,	387
2 in family,	107	Less than $10.00,	1
3 in family,	201	$ 10.00-$19.00,	31
4 in family,	235	20.00- 29.00,	101
5 in family,	215	30.00- 39.00,	106
6 in family,	152	40.00- 49.00,	226
7 in family,	108	50.00- 59.00,	123
8 in family,	92	60.00- 69.00,	141
9 in family,	53	70.00- 79.00,	74
10 in family,	31	80.00- 89.00,	50
11 in family,	11	90.00- 99.00,	18
12 in family,	8	100.00 and over,	46
13 in family,	3		
15 in family,	2		
16 in family,	1		

Average number of persons in 1,234 families, ... 5.2

Average monthly income in 917 families, ... $50.04

The character of the dwellings of the discharged cases were as follows:—

No record,	18
Private house,	1,125
Tenement,	103
Boarding house,	68
Hospital,	3
Institution,	5

Number of rooms—

No record,	90
1 room,	60
2 rooms,	283
3 rooms,	425
4 rooms,	234
5 rooms,	124
6 rooms,	59
7 rooms,	16
8 rooms,	15
9 rooms,	15
12 rooms,	1

The average number of rooms per family in 1,232 families is 3.4 rooms.

History of contact is as follows:—

No record,	22
No contact,	820
Home,	302
Work,	110
Friends,	45
Other,	23

Previous medical history of discharged cases:—

No record,	14
No disease,	105
Diphtheria,	85
Pneumonia,	124
Influenza,	210
Measles,	617
Pertussis,	352
Rheumatism,	149
Pleurisy,	268
Syphilis,	1
Typhoid fever,	154
Frequent colds,	230

The family history of discharged cases was as follows:—

Relatives affected:—	
Father,	54
Brother,	106
Paternal aunt,	15
Paternal uncle,	15
Paternal grandfather,	1
Paternal grandmother,	6
Consort,	42
Mother,	97
Sister,	108
Maternal aunt,	22
Maternal uncle,	24
Maternal grandfather,	10
Maternal grandmother,	5
Children,	16
No history of tuberculosis,	919
No data obtainable,	21

LIST OF DONORS.

Mrs. Wm. Henderson, Harrisburg,	Clothing.
Dr. Walter Angle, East Stroudsburg,	Clothing.
Geo. Sailer, Jeannette,	Clothing.
The Jewish Publishing Co., New York,	Jewish Morning Journal.
S. S. Schweriner, Reading,	2 pairs shoes.
Rev. W. Arthur Warner, Secy., Philadelphia,	Combined prayer books and hymnals.
Bible Asso. of Friends of America, Philadelphia,	Box of Bibles.
Dr. J. Ege, Reading,	8 catalpa trees.
Col. C. F. Tillinghast, Providence, R. I.,	Clothing.
Harrisburg Hospital Magazine Guild,	Scrap books.
Department of Forestry,	Books "Penna. Trees."
Heppe Memorial Fund,	2 pianos and organ.
Mrs. Kate H. Stoddard,	Victrola and 75 records, books.
Grim Bros., Hamburg,	Sewing machine.
Contributions from friends,	Moving picture machine.
Hon. John R. K. Scott, Philadelphia	Seeds for patients' flower beds.

Mrs. Geo. W. Gasser, Reading,	Books.
Mrs. Emma J. Fleck, Rosemont,	Books.
Miss Helen L. Duncan, Philadelphia,	Books.
Mrs. Samuel G. Dixon, Bryn Mawr,	Clothing, confectionery.
Mr. Solon Bausher, Hamburg,	Clothing.
Members Rajah Shrine, Hamburg,	Fruit and confectionery at Christmas.
Mrs. H. Williams, Hamburg,	Clothing.
L. M. Wyant, Hamburg,	Games.
Mrs. A. L. Shomo, Hamburg,	Games.
J. Lee Bausher, Hamburg,	Games.
W. J. Confer, Hamburg,	Books.
J. E. Schmick, Hamburg,	Fruit.
Mrs. P. Morrin, Jeannette,	Fruit.
Miss Elizabeth Ruppert, Philadelphia,	Shrubs.
W. H. Grim, Hamburg,	Trees.
Wm. Kirst, Hamburg,	Vines.



THE DIVISION OF DISTRIBUTION OF BIOLOGICAL PRODUCTS.

J. MOORE CAMPBELL, M. D., *Chief.*



THE DIVISION OF DISTRIBUTION OF BIOLOGICAL PRODUCTS.

The Division of Distribution of Biological Products, with the Department as a whole, this year completes its first decade. The creation of the present Department of Health, by legislative Act of April, 1905, was followed by the rapid organization of its divisions. Before January 1, 1906, diphtheria antitoxin was being supplied to the poor from 473 distributing points. Some four hundred individuals were treated or immunized in the last three months of 1905, but the insignificance of this earliest activity and the proportions of the present-day work of the Division may be judged by noting that in the last three months of 1915 *three thousand six hundred and eight* cases of diphtheria were treated with State antitoxin and an approximately equal number immunized.

The whole number of cases treated during the ten years—or rather the number reported to the Division, which we believe is very close to the total—is 75,431. There have been 6,304 deaths, or a case rate fatality of 8.36 per cent. Taking forty per cent. as the death rate for diphtheria not treated with antitoxin and assuming that at least two-thirds of those treated at the expense of the State could not have secured antitoxin out of their own resources, it appears that 17,434 individuals are indebted to the State for their continued existence—an average of almost 1,750 a year.

The number of those immunized in the course of these ten years is 67,004, and of these 1,002 (or 1.5 per cent.) subsequently contracted the disease.

The 3,000 unit curative dose of antitoxin originally supplied by the Department was discontinued in 1912 and a 5,000 unit dose substituted for it. In all, 266,654 antitoxin packages have been distributed—97,904 of them immunizing doses of 1,000 units each, 73,384 curative doses of 3,000 units, and 95 366 of 5,000 units.

Up to January 1, 1916, the sum of $290,148.95 had been expended for diphtheria antitoxin. Estimating the value of the unused antitoxin in the hands of distributors on that day at $7,130.00, it follows that the per capita cost for all those treated or immunized in the past ten years has been $1.98.

In June, 1910, immunizing doses (1,500 units) of tetanus antitoxin were supplied by the Department for the protection of those injured in Fourth of July celebrations. Sixty-seven distributing stations were at that time selected from the list of previously established diphtheria antitoxin stations and the tetanus antitoxin was simply added to their stock. These stations, and four since added, have been restocked each succeeding June.

Physicians have taken advantage of this supply of tetanus antitoxin and the knowledge that it may be had at any time on notice to the Department when the routine stock of the distributor has been exhausted, to immunize those of their patients who were the victims of wounds such as are frequently followed by tetanus. The number of these immunizations as reported to the Division now totals 456, as compared with 197 following accidents on the "Fourth." The interval between injury and immunization has very generally been less than forty-eight hours and in none of the 653 cases has tetanus developed. Our summarized table carries also another case that was not immunized until eight days after the accident and later developed tetanus.

Curative doses of tetanus antitoxin have been supplied for the treatment of 101 cases of tetanus, 70 of which have died.

Tetanus antitoxin has cost the Department $3,004.66, or about $500.00 a year.

A water extract of tubercle bacilli ("Dixon's Fluid") and a suspension of dead tubercle bacilli have been supplied since June, 1909. This distribution, with very occasional exceptions, has been limited to the dispensaries and sanatoria maintained by the Department for the treatment of tuberculosis. Both of these tubercle bacilli preparations are now made in the Department Laboratories and are furnished in ampuls as being preferable in some respects to the read-to-use syringes at first supplied. The quantity of these products supplied from year to year, as well as the number of patients treated, varies considerably. In a general way, however, both have been steadily increasing, especially during the last two years.

Vaccine virus has not been unrestrictedly furnished for the use of physicians throughout the State, but to the Department's county medical inspectors or representatives, as occasions have arisen. The tuberculosis dispensaries and sanitoria have been routinely supplied, as vaccination is required of all entering the latter.

Since January, 1909, until vaccine virus was furnished through the general office, 26,286 points have been supplied at a cost of $1,640.81.

Typhoid vaccine may hardly be included among the products supplied by the Department. During the latter part of 1915, however, several hundred immunization outfits were distributed and were used chiefly by representatives of the Department.

DIPHTHERIA ANTITOXIN.

The general plan of distribution of diphtheria antitoxin from stations scattered over the State has been continued without change, and there is no question that the principal object of this distribution—making the antitoxin available when and where needed—is attained. Very occasionally a station may be temporarily without antitoxin, either owing to the oversight of the distributor or unusual demands on his stock. The State is so well covered, however, that this lack means little more than the inconvenience of applying at the next nearest station.

During the year ten towns were added to the list of those in which a supply of diphtheria antitoxin is maintained by the Department. These were:—New Hope, Bucks County; Eddystone, Chester County; Ohiopyle, Fayette County; Deep Valley, Greene County; Wapwallopen, Luzerne County; Newberry, Lycoming County; Loysville, Perry County; New Philadelphia, Schuylkill County; Goldsboro, Manchester, York County.

Manchester, just mentioned, was substituted as a distributing point for Emigsville, York County, and the station at the latter place was discontinued. Heilwood in Indiana County was again placed on the list, having been dropped in 1914, owing to the difficulty of finding a distributor there. The total number of stations is now 686, only seven of which were without distributors on December 31, 1915.

The quantity of antitoxin lost by outdating in 1914 attracted attention as being unnecessarily great. Toward the end of the year, to see what might be accomplished to reduce this loss, wide-spread exchanges of almost outdated packages were made and the older antitoxin was transferred to active places where it stood a fair chance of being promptly used. This was an innovation only in so far as the whole State was combed for the packages wanted and these were relatively fresh as compared with the limited exchanges of practically already lost antitoxin previously made. The results were satisfactory and this method was continued all through 1915, during which year 3,863 packages of antitoxin were recalled and reshipped, with a loss of only 555 of them. Twenty two hundred and sixty-five reshipped packages were of a thousand units, 1,598 were of five thousand units. In 1914, 2,040 packages were lost and the monetary saving in 1915, as compared with the preceding year, amounted to $1,065.30. The table below contrasts the results of the two years.

ANTITOXIN LOST BY OUTDATING—1914-1915.

	1914.					1915.				
	Packages Lost.			Net Cash Loss.*		Packages Lost.			Net Cash Loss.*	
Units,	1,000	3,000	5,000	1,000	5,000	1,000	3,000	5,000	1,000	5,000
January,						8			$2 40	
February,	139	14	75	$41 70	$112 50					
March,	143	33	78	42 90	117 00	54	2	21	16 20	$31.50
April,	157	3	65	47 10	97 50	76		8	22 80	12 00
May,	115		66	34 50	99 00	83		3	24 90	4 50
June,	112		65	33 60	97 50	27		18	8 10	27 00
July,	28	2	36	8 40	54 00	43		19	12 90	28 50
August,						42		32	12 00	48 00
September,†	298	11	79	89 40	118 50					
October,						52		17	15 60	25 50
November,	299	1	184	89 70	276 00	36		2	10 80	3 00
December,	32		5	9 60	7 50	11		1	3 30	1 50
Totals,	1,323	64	653	$396 90	$979 50	432	2	121	$129 60	$181 50

*That of the 3,000 unit packages is not included as these were simply "left overs," overlooked by distributors when recalled in 1912.
†Cleaning up outdated packages throughout the State commenced. By December 1st rearrangement had been completed and only thirty-seven packages lost on that date.

It has been attempted from the first to account for every package of antitoxin purchased and to require a clinical report of each case treated or immunized. Here problems are encountered, for which, largely on account of their inherent difficulty, no entirely satisfactory solution has been yet worked out.

There are 6,921 physicians in the State (outside of Philadelphia and Pittsburgh) and 686 antitoxin distributors. All of the physicians at sometime use State antitoxin. There are then 7,607 potentialities with which the Division has to contend in its efforts to reduce details to the accuracy which indeed seems to be only theoretically possible. The number of antitoxin packages not accounted for by a physician's receipt totals to date some fifteen per cent. of all supplied. We believe this to be almost entirely chargeable to neglect on the part of the physician to sign for antitoxin when received and to failure on the part of the distributor to insist that he must, so that with the lapse of a very few days, the whole thing is likely to be forgotten by both of them.

A certain proportion of clinical reports are always received, for which the corresponding receipts fail to come to hand. By taking

into consideration the antitoxin packages thus accounted for, the fifteen per cent. lost becomes less. On the other hand, a number of those who do not sign their antitoxin receipts must also fail to forward reports of their cases. We have estimated, from receipts for which there were no reports, that 595 cases were treated and 668 were immunized, above the number of cases really reported. The reports showed 9,399 cases treated and 10,661 immunized. 20,060 altogether, to which may be added the estimated number 1,163 for a total more nearly representing the facts. The tables submitted are compiled from case reports only.

Diphtheria was less prevalent in Pennsylvania during 1915 than in the preceding year, and the number of cases treated with State antitoxin fell from 10,562 in 1914 to 9,399. This is the least number treated since 1911, although not much less than the number in 1912. It is interesting to note, however, as indicating a more general use of antitoxin for immunizing purposes, that where there were 9,399 cases of diphtheria 10,661 individuals were immunized—only 235 less than were immunized in 1914, when 10,562 cases of diphtheria were treated and 2,000 more than were immunized in 1912 when the number of cases treated was but little in excess of those treated in 1915. The per capita cost of treatment and immunization in 1915 was $2.11 (not deducting for purchased but unused packages). This cost had steadily increased since 1908 when it was $1.36 to 1913 when it was $2.17. In 1913 the 5,000 unit package was used instead of the 3,000 unit curative dose, which largely accounts for the increase to $2.17 in that year as compared with $1.93 in 1912. In 1914 it was again $2.17, but fell in 1915 to $2.11, as mentioned above. The average number of packages used for each case was about the same in 1913, 1914 and 1915—a fraction greater in 1915.

The death rate in 1915 (8.68%) fell a trifle (0.27%) as compared with that of 1914 (8.95%) and is somewhat above the ten-year average (8.36%).

The tables from number II to number VIII largely repeat well-known facts. Table II shows the usual progression in the fatality of diphtheria when treatment has been delayed. The curve for 1915 compares favorably with that of the past ten years, except perhaps as regards treatments of the first day. Our conviction is that a more careful history would prove many cases reported to us as treated with antitoxin on the first day to have been older.

Table III illustrates the more or less sudden autumnal increase in the occurrence of diphtheria, although, as compared with the figures presented in 1914, the increase in 1915 was less abrupt and appeared in October instead of in September. Further, while in 1915 the number of cases showed a decline from the maximum beginning in November, in 1914 the maximum was not reached until November; and

while decline was evident in December of 1914, it was not until January, 1915, that the number of cases fell below that of the month (September) in which the autumnal increase had begun. From September, 1914, to December, 1914, inclusive, the cases of diphtheria treated with State antitoxin exceeded those of the corresponding months in 1915 by 882. Also, while it is again shown that morbidity is higher and fatality lower in the fall than in the spring, this relation is much more apparent in the figures for 1914 than in those for 1915.

Table IV simply repeats the relative immunity of infants, the susceptibility of children between one and five years, and the declining susceptibility from that age on. The marked fatality of the disease in infants and its decline as age increases is also again shown.

The relative fatality of the various types of involvement is shown in Table V. With two or three rather marked differences (notably a death rate in postnasal diphtheria of 13.07 per cent. in 1915 as compared with 8.64 per cent. in 1914 and in the postnasal laryngeal form 16.00 per cent. in 1915, as compared with 25 per cent. in 1914), the death rates of 1915 for the different types correspond generally with figures for other years.

The usual complications appear in Table VI, and in Table VII a number of associated infections.

Immunization with diphtheria antitoxin, as mentioned before, was practised relatively more frequently in 1915 than in any other year. The general result, as regards protection, was a shade better than in late years, and also a little better than the ten-year average. Of the 10,661 persons immunized only a hundred and twenty-nine developed diphtheria and only one of these died.

Suspicious throats were treated with at least one dose of antitoxin in ninety instances, the revised diagnosis excluding diphtheria. These cases have been included as immunizations in the total (10,661) given. Forty-two individuals are reported as having been immunized, although there was no history of exposure to diphtheria. In seven instances no length of time as regards exposure is given.

The number of those immunized after a single day's exposure is reported as 3,843 and after two days' exposure 3,100. On the third day 1,501 were immunized and from that on immunizations are recorded as late as the sixtieth day. As might be expected the great majority of subsequent cases of diphtheria were among those who had been earliest immunized. After the seventh day, on which 391 were immunized, five of them unsuccessfully, 512 immunizations are reported with five contracting the disease. Of those immunized on or before the seventh day 1.20 per cent. developed diphtheria, while after the seventh day only 0.10 per cent. came down with the disease. It seems clear that natural immunity asserts itself by the

seventh day at least, and the figures suggest the query whether anything is to be gained by immunizations after the individual has been exposed to diphtheria for an interval of a week.

The immunizing dose employed was usually a thousand units, but it varied considerably above or below that amount. Less than five hundred units were seldom employed, and the result, regardless of dose, was practically the same.

TABLE I. SUMMARY OF DATA RELATING TO DIPHTHERIA ANTITOXIN, 1905-1915.

Year.	Stations.	Supplied.			Used.			Cases treated.	Recoveries.	Deaths.	Percentage of deaths.	Number immunized.	Number developing diphtheria.	Percentage developing.	Cost.
		1,000 units.	3,000 units.	5,000 units.	1,000 units.	3,000 units.	5,000 units.								
1905,	*473	2,958	3,009	----------	327	619	----------	293	255	38	12.97	155	5	3.22	$7,251 80
1906,	511	4,638	7,470	----------	3,725	6,564	----------	3,529	3,136	393	11.14	2,334	77	3.30	16,192 32
1907,	529	5,173	8,981	----------	4,214	8,309	----------	5,271	4,895	376	7.13	3,799	34	0.89	17,387 13
1908,	569	6,793	11,302	115	4,326	8,840	61	6,336	5,794	542	8.55	3,965	45	1.13	14,056 40
1909,	650	8,680	13,221	417	5,958	11,086	284	5,365	4,949	416	7.75	4,847	109	2.25	16,565 52
1910,	656	8,608	12,416	3,240	6,237	10,501	2,800	6,524	5,965	559	8.57	5,194	87	1.68	22,232 18
1911,	662	11,292	12,214	6,652	8,180	10,000	6,076	7,793	7,283	510	6.54	6,906	125	1.81	27,983 01
1912,	667	11,775	4,760	15,132	8,692	4,881	11,339	9,919	9,156	763	7.69	8,581	94	1.09	35,723 76
1913,	667	12,539	9	22,817	10,054	272	19,515	10,440	9,494	946	9.06	9,775	125	1.28	43,830 28
1914,	676	12,792	2	24,288	10,531	3	21,554	10,562	9,617	945	8.95	10,896	173	1.59	46,572 24
1915,	686	12,656	----------	22,705	11,066	----------	20,140	9,399	8,583	816	8.68	10,661	138	1.29	42,354 31
Totals,	------	97,904	73,384	95,366	73,310	61,075	81,769	75,431	69,127	6,304	8.36	67,113	1,012	1.50	$290,148 95

*Distribution direct from Harrisburg, during October—appointments being made in November.

TABLE II. FATALITY IN RELATION TO INTERVAL BETWEEN ONSET AND TREATMENT.

1915, AND 1905-1915.

		Cases.	Recoveries.	Deaths.	Death Rate.
1st day,	1915	5,456	5,118	338	6.19
	1905-1915	46,679	44,018	2,661	5.70
2nd day,	1915	2,307	2,106	201	8.71
	1905-1915	17,357	15,824	1,533	8.83
3rd day,	1915	932	809	123	13.20
	1905-1915	6,633	5,662	971	14.64
4th day,	1915	347	276	71	20.46
	1905-1915	2,352	1,840	512	21.77
5th day and later,	1915	357	274	83	23.25
	1905-1915	2,410	1,783	627	26.02
Totals,	1915	9,399	8,583	816	8.68
	1905-1915	75,431	69,127	6,304	8.36

TABLE III. DIPHTHERIA BY MONTHS, 1915.

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Cases,	1,023	808	725	511	588	443	460	458	775	1,301	1,211	1,096	9,399
Recoveries,	941	736	650	466	530	397	426	421	704	1,198	1,111	1,003	8,583
Deaths,	82	72	75	45	58	46	34	37	71	103	100	93	816
Death rate,	8.01	8.91	10.34	8.81	9.86	10.38	7.39	8.08	9.16	7.92	8.26	8.48	8.68

TABLE IV. ANTITOXIN TREATMENT OF DIPHTHERIA IN RELATION TO AGE AND SEX, 1915.

		Under 1 Yr.	1-5 Yrs.	6-9 Yrs.	10-14 Yrs.	15-19 Yrs.	20 Yrs. and Over.	Total All Ages.
Total cases,	Total,	137	3,566	2,490	1,429	503	1,274	9,399
	Male,	85	1,871	1,205	588	213	435	4,397
	Female,	52	1,695	1,285	841	290	839	5,002
Recoveries,	Total,	101	3,038	2,341	1,370	489	1,244	8,583
	Male,	63	1,609	1,142	562	206	418	4,000
	Female,	38	1,429	1,199	808	283	826	4,583
Deaths,	Total,	36	528	149	59	14	30	816
	Male,	22	262	63	26	7	17	397
	Female,	14	266	86	33	7	13	419
Death Rate,	Total,	26.28	14.81	5.98	4.13	2.78	2.35	8.68
	Male,	25.88	14.00	5.23	4.42	3.29	3.91	9.03
	Female,	26.92	15.69	6.69	3.92	2.41	1.55	8.38

TABLE V. ANTITOXIN TREATMENT OF DIPHTHERIA IN RELATION TO AREA INVOLVED, 1915.

	Area Involved.															
	Postnasal.	Postnasal, tonsillar.	Postnasal, pharyngeal.	Postnasal, laryngeal.	Postnasal, tonsillar, pharyngeal.	Postnasal, tonsillar, pharyngeal, laryngeal.	Postnasal, pharyngeal, laryngeal.	Pharyngeal.	Pharyngeal, tonsillar.	Pharyngeal, laryngeal.	Pharyngeal, laryngeal, tonsillar.	Tonsillar.	Tonsillar, laryngeal.	Laryngeal.	Postnasal, tonsillar, lardyngeal.	Totals—All types.
Total cases,	153	338	109	50	625	127	43	208	1,680	94	298	4,022	434	1,188	30	9,399
Recoveries,	133	311	94	42	526	73	35	192	1,610	77	233	3,966	366	905	20	8,583
Deaths,	20	27	15	8	99	54	8	16	70	17	65	56	68	283	10	816
Death rate,	13.07	7.99	13.76	16.00	15.84	42.52	18.60	7.69	4.17	18.08	21.81	1.39	15.67	23.82	33.33	8.68

TABLE VI. DIPHTHERIA—COMPLICATIONS, 1915.

	Endocarditis.	Myocarditis.	Other cardiac conditions.	Paralyses.	Bronchitis.	Pneumonia.	Nephritis.	Uraemia.	Abscess.						
									Unqualified.	Tonsillar or related.	Cervical gland.	Otitic.	Pulmonary.	Sublingual.	Submaxillary.
Cases,	15	31	79	95	34	68	52	2	5	15	5	12	1	1	3
Recoveries,	4	10	23	79	27	28	26	0	4	15	3	10	1	1	3
Deaths,	11	21	56	16	7	40	26	2	1	0	2	2	0	0	0

TABLE VII. DIPHTHERIA—ASSOCIATED INFECTIONS, 1915.

	Cases.	Recoveries.	Deaths.
Scarlet fever,	96	79	17
Measles,	22	18	4
Whooping cough,	4	3	1
Chicken pox,	1	0	1
Meningitis,	5	1	4
Erysipelas,	5	4	1
Purpura,	2	0	2
Grippe,	1	0	1

TABLE VIII. IMMUNIZATION WITH DIPHTHERIA ANTITOXIN, 1915.

Immunizing Dose.	Number Immunized.	Number Developing Diphtheria.	Percentage Developing Diphtheria.
1,000 units,	9,671	111	1.15
Less than 1,000 units,	220	2	0.91
More than 1,000 units,	770	15	1.95
Total number immunized,	10,661	128	1.20

TETANUS ANTITOXIN.

Two stations were added during the year (Kittanning, Armstrong County, and Lebanon, Lebanon County), bringing the total number up to seventy-one. All were supplied with tetanus antitoxin by June 30th. Antitoxin packages left over from the preceding July 4th were recalled and shipped to large towns, with the result that all were used except thirteen, which were later returned outdated.

Apart from the demand for the Fourth of July, immunizing doses (1,500 units) of tetanus antitoxin have been furnished through distributors or the Department directly, as occasion for their use arose. Thus, while the number of persons immunized with State antitoxin during the past year was one hundred and ninety, only fifty-nine of them were injured in connection with the celebration of the Fourth. A large number of 1,500 unit packages were sent to and used at Erie, following a cloud burst and flood which happened there in the early part of August.

Twenty-four cases of developed tetanus were treated with antitoxin at the expense of the State in 1915. This was exactly twice the number treated in 1914, and exactly twice the number died—that is, fourteen in 1915.

TETANUS ANTITOXIN, 1910-1915.

Year.	Stations.	Packages Supplied.					Packages Used.					Cases immunized.	Developed tetanus.	Cases treated.	Recovered.	Died.	Cost.
		1,500 units.	3,000 units.	5,000 units.	25,000 units.	50,000 units.	1,500 units.	3,000 units.	5,000 units.	25,000 units.	50,000 units.						
1910,	67	611					241					76		16	2	14	$722 40
1911,	68	144					202					83		27	6	21	292 80
1912,	68	164					122					86		14	5	9	69 60
1913,	68	216			2	2	133			1	2	107		8	3	5	199 31
1914,	69	198	8	30	21		138	3	16	10		112	*1	12	5	7	418 64
1915,	71	381	6	212	40		294	10	141	13		190		24	10	14	1,301 91
Totals,		1,714	14	242	63	2	1,130	13	157	24	2	654	*1	101	31	70	3,004 66

*Immunized 8 days after accident.

IMMUNIZATION WITH TETANUS ANTITOXIN, 1915.

Type of Wound.	Totals.	Injured.		Sex.		Treatment.		Developed Tetanus.
		On July 4th.	Before or After July 4th.	M.	F.	Within 48 Hours.	After 48 Hours.	
Gunshot,	24	7	17	24		21	3	
Lacerated (explosives),	37	28	9	36	1	32	5	
Lacerated,	21		21	19	2	19	2	
Punctured,	71		71	57	14	58	13	
Other,	37	24	13	30	7	29	8	
Totals,	190	59	131	166	24	159	31	

TETANUS ANTITOXIN—CASES TREATED, 1915.

Age.	Sex.		Color.		Type of Wound.				Units Used.	Recovered.	Died.
	M.	F.	W.	B.	Gunshot.	Punctured.	Lacerated.	Other.			
8,		1	1		1				1,500		1
17,	1		1		1				12,000		1
14,		1	1			1			45,000	1	
12,	1		1			1			49,500	1	
34,	1		1			1			19,500		1
12,		1	1			1			38,500	1	
6,		1	1			1			33,000	1	
7,	1		1			1			4,500	1	
50,	1		1			1			6,000		1
28,	1			1		1			10,500		1
31,	1		1			1			14,000	1	
42,	1		1				1		25,000		1
40,	1		1				1		25,000		1
21,	1		1				1		195,000	1	
41,	1		1				1		25,000		1
16,	1		1					1	12,000		1
17,	1		1					*1	135,000		1
11,		1	1					1	32,000		1
9,		1	1					1	42,000		1
24,	1		1					1	15,000	1	
6,	1		1					1	76,500	1	
17,	1		1		1				23,000		1
40,	1		1					1	38,000	1	
10,	1		1			1			225,000		1
Totals,	18	6	23	1	3	10	4	7		10	14

*After tooth extraction.

TUBERCLE BACILLI PRODUCTS.

During 1915 there was a noticeable increase in the number of dispensary chiefs using tubercle bacilli extract ("Dixon's Fluid) and suspension of dead tubercle bacilli for the treatment of patients attending the State tuberculosis dispensaries. Exactly three thousand more doses of extract and almost one thousand more doses of the suspension were prepared and shipped by the laboratories on orders of this Division than had been supplied in 1914.

The ready-to-use syringe was discarded during the year and the tubercle bacilli products were put up in ampuls only, all dispensaries using these products having been furnished with glass syringes of capacity of two cubic centimeters for their administration.

TUBERCLE BACILLI PRODUCTS.

SUPPLIED AND USED.

1909—1915.

		1909	1910	1911	1912	1913	1914	1915	Totals
Tubercle Bacilli Extract.	Supplied,---	5,443	7,688	5,736	7,932	19,781	18,396	21,396	86,372
	Used, ------	5,363	7,197	4,764	7,170	12,686	16,941	17,174	71,295
Suspension Dead Tubercle Bacilli.	Supplied,---	580	2,642	1,628	1,024	2,863	2,258	3,233	13,628
	Used, ------	580	1,276	994	861	1,263	1,993	2,476	9,443

TUBERCLE BACILLI EXTRACT.

AMPULS SUPPLIED AND USED—1915.

Dilution.	Dispensaries.		Sanatoria.						Totals.	
			Mont Alto.		Cresson.		Hamburg.			
	Supplied.	Used.	Supplied.	Used.	Supplied.	Used.	Supplied.	Used.	Supplied.	Used.
No. 1,	1,629	1,334	1,350	1,371	1,100	869	286	258	4,365	3,832
No. 2,	1,332	1,074	1,200	1,145	700	518	240	170	3,472	2,907
No. 3,	1,038	808	942	880	500	494	144	90	2,624	2,272
No. 4,	882	750	707	668	401	439	60	25	2,050	1,882
No. 5,	825	705	507	440	415	394	60	3	1,807	1,542
No. 6,	699	517	384	296	425	257	----	----	1,508	1,070
No. 7,	490	393	252	186	450	262	----	----	1,192	841
No. 8,	378	301	106	99	420	186	----	----	904	586
No. 9,	283	245	70	78	525	165	----	----	878	488
No. 10,	284	181	66	64	440	135	----	----	790	380
No. 11,	172	139	28	25	220	108	----	----	420	272
No. 12,	169	109	36	26	----	85	----	----	205	220
No. 13,	121	81	16	18	250	116	----	----	387	215
No. 14,	108	84	16	21	20	20	----	----	144	125
No. 15,	85	73	16	12	20	14	----	----	121	99
No. 16,	79	78	----	----	20	9	----	----	99	87
No. 17,	84	71	----	----	10	6	----	----	94	77
No. 18,	89	82	----	----	10	3	----	----	99	85
No. 19,	116	109	----	----	10	3	----	----	126	112
No. 20,	101	80	----	----	10	2	----	----	111	82
Totals,	8,964	7,214	5,696	5,329	5,946	4,085	790	546	21,396	17,174

SUSPENSION OF DEAD TUBERCLE BACILLI.

AMPULS SUPPLIED AND USED—1915.

Dilution.	Dispensaries.		Sanatoria.						Totals.	
			Mont Alto.		Cresson.		Hamburg.			
	Supplied.	Used.	Supplied.	Used.	Supplied.	Used.	Supplied.	Used.	Supplied.	Used.
No. 1,	338	245	150	181	100	25	5	2	593	453
No. 2,	335	240	180	186	50	24			565	450
No. 3,	243	179	108	123	50	12			401	314
No. 4,	181	135	80	87	50	20			311	242
No. 5,	122	103	48	55	60	27			230	185
No. 6,	128	96	78	65	60	13			266	174
No. 7,	118	77	24	27	10				152	104
No. 8,	76	73	54	27	10				140	100
No. 9,	77	83	22	11	10				109	94
No. 10,	77	84	22	10	10				109	94
No. 11,	49	51	10	3					59	54
No. 12,	51	45	10						61	45
No. 13,	56	50							56	50
No. 14,	60	48							60	48
No. 15,	58	33							58	33
No. 16,	63	36							63	36
Totals,	2,032	1,578	786	775	410	121	5	2	3,233	2,476

TYPHOID VACCINE.

Except for a few packages used in the vaccinnation of those associated with the Department's Engineering Division, and a large amount used in an experimental way during the outbreak at Troy in 1912, typhoid vaccine was not supplied by the Department until the present year. With the appearance of typhoid fever in Danville, originating in the Insane Asylum there, but also soon assuming the form of a borough epidemic, material for two hundred immunizing treatments was sent there in September. These were for use under the direction of the Department's representatives. Similarly in the following month three hundred immunizing outfits were sent to Shippensburg. At this place at least two hundred of these were placed

in the hands of the Department's antitoxin distributor and through family physicians were used to vaccinate such individuals as desired the vaccination. This is the nearest approach to a general distribution of typhoid vaccine attempted thus far by the Department. The results of these vaccinations are to be found in the report of the Division of Medical Inspection.

In addition to the above, forty immunization outfits were sent for the county medical inspector's use in Shavertown, Luzerne County, and thirty to the sanatorium at Mont Alto, on the appearance of typhoid fever following a private oyster supper in which the nurses of the institution participated.

Each of the outfits supplied by the Department consisted of the usual three injections of dead typhoid bacilli (two doses of one thousand million following at proper intervals after an initial dose of five hundred million). The vaccine supplied to Mont Alto, however, was of the sensitized type.

To sum up:

Number of three-syringe packages of typhoid vaccine supplied,	580	
Cost of these,		$522 00
Number of three-syringe packages of sensitized typhoid vaccine supplied,	30	
Cost of these,		$18 00
Total,	610	$540 00
Returned unused,	47	
Credit for these,		$42 30
Packages used,	563	
Cost,		$497 70

VACCINE VIRUS.

Smallpox vaccine, as in previous years, has been supplied to the Department's tuberculosis dispensaries and sanatoria for the vaccination of those applying for treatment. It has otherwise been furnished only for use by the Division of Medical Inspection in actual outbreaks of smallpox, such as occurred during the present year in twenty-three counties of the State: Allegheny, Armstrong, Beaver, Blair, Bradford, Cambria, Carbon, Clarion, Crawford, Cumberland, Dauphin, Erie, Huntingdon, Indiana, Lackawanna, Lancaster, Lawrence, Mercer, Montgomery, Somerset, Tioga, Venango and Warren.

From the organization of the Division to December 31, 1915, material for 30,624 vaccinations had been supplied, as follows:

Year.	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915
Points and tubes of lmyph, -----	1,720	1,460	1,160	1,090	2,266	2,943	4,761	5,373	5,467	4,384



DIVISION OF HOUSING.

BUREAU OF HOUSING.

JOHN MOLITOR, *Chief of Bureau.*



REPORT ON HOUSING.

In February, 1915, the Commissioner of Health decided to carry into effect the Act of Assembly approved July 24, 1913, establishing a Bureau of Housing in the Department of Health. The Legislature made no appropriation at that session for the necessary expenses of the Bureau. For the balance of the year 1915 the expenses were paid out of the general sums appropriated to the Department of Health.

It was the intent of the Legislature to benefit the State primarily by alleviating the living conditions of that portion of the population who are compelled to live in tenement, lodging and boarding houses, not only by correcting housing conditions, but also by educating the people to live in a more sanitary and hygienic manner.

The problem of educating them into ways of healthful living is closely related to the housing problem by reason of their congested quarters, so the Legislature gave to the Commissioner of Health, Dr. Samuel G. Dixon, broad supervisory powers of housing inspection and enforcement of proper living conditions.

Early in March an investigation into the housing conditions of the eighth ward in the Borough of Nanicoke was begun, as the living conditions here were wretched. A typhoid epidemic occurred here several years ago. Later on reports were received by the Department that many of the children had tuberculosis. A preliminary survey of the town showed that the population lived in congested quarters with very poor sanitary arrangements and conveniences.

The eighth ward is a separate settlement about one and a half miles from the center of Nanticoke and contains about 280 houses, mostly double houses of five or six rooms each on lots 30 feet wide by 160 feet deep, with alleys 20 feet wide at the rear. At the rear end of each lot facing on the alley is generally found a hetrogeneous collection of sheds, barns and coops, which are occupied by horses, cattle, rabbits, chickens, etc., most of the structures being in a filthy condition. Some lots have houses built upon their rear ends and facing upon the alleys, with these unclean sheds and their filth as near neighbors.

The people are mostly foreigners, and the men are employed in the mines in the vicinity owned by the Delaware, Lackawanna and Western Railroad Company.

Some houses are owned and occupied by one family. A few are owned by the coal mining department of the railroad company and are also occupied by one family. These are all kept in good condition and the grounds are maintained in a sanitary manner.

The houses are frame, two stories high, generally with an attic in the roof and a cellar or basement; most of them are double, one side occupied by the family owning the property, who take in boarders and rent out the other side,—sometimes to one family who take a large number of boarders or to several families who also take boarders. The number of boarders range from two to nine for each family, according to the available room; fourteen families took boarders who occupied the beds in day and night shifts. The highest number of occupants of any one house was 27 for six rooms; most of them averaging from 15 to 20 for a five or six room house. There were three houses found occupied by three families each; in eighteen houses there were beds in the cellars for boarders; one double house was occupied by five families—two on one side and three on the other.

Houses rent for eight dollars per month for a four-room house; ten dollars per month for a five-room house; twelve dollars per month for a six-room house, at the rate of two dollars per month per room. Roomers pay two dollars and fifty cents per month per room; boarders pay about one dollar and twenty-five cents per week for a bed and pay the woman of the house the cost of the food ordered by them, who keeps enough of the food for her own use for the trouble of cooking it.

The congestion of the population, with the resultant insanitary conditions, was due to the scarcity of houses located conveniently near to the mines. Some years ago lots were sold by the company on easy terms to its employes, and they were encouraged to build up this settlement; but when the company found out how the houses were occupied it stopped the sale of lots and ran free trains to and from Plymouth and Kingston to try to relieve the situation.

There being no adequate sewerage system, the kitchen waste was either thrown out upon the ground or else ran through a wooden box gutter to the street or to some point in the rear yard. This water formed stagnant pools either in the street, the rear of the lot, or on adjoining lots.

The street gutters, alleys, vacant lots and the vacant spaces on occupied lots were generally filled with rubbish, heaps of manure, tin cans and even dead animals and the entrails of animals removed in preparing them for eating purposes.

Dr. Dixon, Commissioner of Health, brought this matter to the attention of the officials of the company employing these men and owning the vacant ground in and around this settlement. In reply a desire was expressed to assist and co-operate with the Department

in improving conditions there. Upon the recommendation of Dr. Dixon, the company sold many of the vacant lots and opened up a new section of forty-two lots, upon which houses were immediately built and are now building, as fast as the purchasers can make the necessary financial arrangements. The company intends to open up another section of forty-two lots at an early date. It has also built a group of twenty double houses, of hollow tile construction, just outside the borough limits. These houses will be rented to the employes and this will be followed by the construction of more groups as fast as the conditions warrant the company to undertake the expense.

Since new building work was started, there have been great improvements in this settlement. Upon orders from the Department, the living in cellars has ceased and houses formerly filled by many people are now occupied by single families who take few or no boarders. The streets and gutters have been graded and drained; vacant lots have been cleaned and when below the road level have been filled in with clean earth; the alleys have been cleaned and graded; several wells that were still in use, although within a short distance of privy vaults and manure piles, have been filled in.

These improvements were not confined to the eighth ward only. Similar improvements were started and completed in other sections of the borough, notably in the eleventh ward.

In April the Department began an investigation in Shenandoah, Schuylkill County.

This borough was found to be very closely built up, presenting all the different forms of overcrowding,—every available piece of land being built upon; the houses with occupants in every corner from garret to cellar.

According to the 1910 United States census, Shenandoah had a population of 25,774, and it is estimated that the population has increased to 29,000 or 30,000. The area is less than one square mile; there are nine streets running east and west and eleven streets running north and south, the blocks being divided by alleys, so that lots can be and are built upon front, center and rear, with very little open air space left.

There are approximately one hundred and forty-six built-up blocks in Shenandoah with a population of about 29,000, whereas Mahanoy City, six miles distant, has one hundred and thirty-eight built-up blocks with a population of only 16,000. The excess of population is more marked when consideration is taken of the height of houses. No house is over three stories high and most of them are only two stories high. In the houses on the main streets the ground floors are occupied by stores, saloons and other business places.

The percentage of increase in population, 26.8 from 1900 to 1910, is quite high and yet it has been accomplished without expansion and there have been few new homes built in recent years except on the rear ends of lots. Thus the transformation of old houses into tenements became a necessity. Families of from four to seven or eight people live in two rooms. Small houses of two rooms to the floor are frequently occupied by three families, one in the basement or cellar, and one in each of the upper stories. In some cases the back room in the cellar is dark and without a window.

The interior houses on the lots are reached through narrow passageways, alleys and tunnels; off of Main Street the houses on the rear of the lots have as their only exit and entrance narrow passageways hardly two feet in width between buildings.

All of the yards and alleys are in a filthy and insanitary condition; many of the privy vaults are in a grossly neglected condition. In some cases vaults have been connected to the sewer but very little attempt has been made to install proper fixtures and there is no water supplied for flushing in many instances.

That the insanitary condition of the houses and premises does not bring about an epidemic of some disease is perhaps due to the splendid natural drainage of the town and to its high elevation above sea level and above the surrounding country.

The small areas or yards in these crowded tenements are often the only place where children can play. There were counted in various places from fifteen to twenty-five children in spaces of not more than two to three hundred square feet. These areas were completely surrounded by houses and privies, except for the alley or tunnel through which entrance was had to the place. These places had no outlook except to the sky above, and were dark, dismal and dreary, without any sunshine or any chance for air to circulate, while the ground or paving is often in a filthy condition.

The land is owned by three corporations as follows: The Girard Estate to the north of Line Street, the Gilbert and Schaefer Estates to the south of Line Street and west of West Street, the Philadelphia and Reading Coal and Iron Company to the south of Line Street and east of West Street. No land is offered for sale or lease. The congestion is due to the fact that there can be no place for the people to build homes unless available land is placed upon the market.

From interviews held with the officials of the Girard Estate they were convinced by Dr. Dixon of the necessity of opening up land controlled by them because that owned by the other corporations could not be safely built upon.

When this ground is opened up and placed on the market at a reasonable price, it will relieve conditions of overcrowding and congestion, by providing a convenient location that will meet the needs

of the workmen and enable them to build neat and comfortable homes, and with sufficient breathing space for themselves and their families.

The Girard Estate has already filed plans for approval with the Department of their proposed sewerage system for the development of this ground. The Girard Estate engineer in charge of this property, Mr. James Archbald, Jr., will consult with the Department in regard to the arrangement of lots and the housing restrictions to be placed upon them to prevent overcrowding and congestion.

On the first of July, 1915, notices were served upon ten property owners in Shenandoah condemning their properties and declaring that they are overcrowded and unfit for human habitation, under the provisions of the Act of Assembly of June 24, 1913. Copies of these notices of condemnation were filed in the prothonotary's office, Pottsville, Schuylkill County. Since these notices were filed one owner has submitted to this office several times plans for the purpose of having alterations made upon the property; since which time it has been put in good condition.

The other properties had minor alterations made which were not satisfactory. Therefore action has been brought by the Department to compel the owners to make the alterations and repairs necessary to put them in habitable condition. There are eight properties which have been cleaned up and put in good condition, with proper toilet conveniences installed, as a result of the Department's work.

There are a number of other properties, upon the owners of which notices have been served. These owners have promised to comply with the orders of the Department.

In July and August many mining towns were visited in Cambria, Westmoreland and Fayette Counties, where conditions were found to be less serious than they are in the anthracite coal districts. A great many of the companies operating in that district, such as the Ellsworth Colliery Company, H. C. Frick Coal and Coke Company, the Pittsburgh Crucible Steel Company, etc., have undertaken to put company houses in a good condition, and they do not permit them to become overcrowded under any circumstances. They have adopted a regular system of giving encouragement to employes and they award prizes to those who maintain the best kept houses, yards and gardens. They sell them seeds and shrubs and plants, at cost, and in several cases they supply manure and fertilizer free of cost. However there are several towns in the district which should be investigated further.

One proper method of improving housing conditions throughout the State would be for the Department to co-operate with corporations in establishing similar methods for encouraging their workmen to live under better conditions.

In addition to this work, there has been the consideration of complaints sent in to the Department. In each instance the nearest health officer has been directed to investigate the matter and report

his findings to the Department, and in nearly all cases the nuisances and insanitary conditions have been remedied within a few days of the visit of the health officer.

A number of requests have also been received asking for information as to the proper methods of ventilating buildings of various kinds.

Visits were made to various places—Ardmore, Bryn Mawr, Wayne and Coatesville—where many insanitary conditions have been corrected through the co-operation of local boards of health. At Eddystone, with the assistance of the burgess, the erection of bunk houses for the workmen was prevented. These men were drawn there by the new, large manufacturing plants. At Norwood the same scheme was stopped. Many workmen unable to find homes at Eddystone go to neighboring towns, the railroad companies putting on special trains for their convenience, even to running express trains from Philadelphia.

Chambers of commerce which have become interested in housing conditions in their own towns were given information concerning this line of work, with lists of books and literature which would be of assistance to the people of their communities.

There are already evidences that other States are looking to Pennsylvania for leadership, as for instance Kentucky, where a similar bureau is being organized.

In April a talk was given before the chamber of commerce of Altoona on "The Relation of Housing to Health," by the chief of the Bureau of Housing, representing Dr. Samuel G. Dixon, Commissioner of Health. This talk was well received by the members and great inetrest was shown in the subject, judging from the number of questions asked. The action of the Commissioner of Health in starting this work was highly commended.

Various other talks of an informal nature on housing conditions have been given to the local boards of health in Nanticoke, Shenandoah, Chester and Coatesville.

In conclusion, it seems advisable to call attention to the valuable aid rendered by the visiting nurses of the Department in correcting many cases of bad housing that come to their attention in the course of their regular duties. We have only begun to touch upon housing conditions among the poor, and these trained women under the efficient management of Dr. Dixon are doing important work in improving the health of the people, not only by correcting the evils arising from bad housing, but also by teaching the members of a household how to secure the best possible living conditions out of such housing as they have.

The Department has for several years been carrying on this work through the visiting nurses, in connection with many other activities, and even before any housing legislation was enacted.

DIVISION OF SANITARY ENGINEERING.

CHARLES. A. EMERSON, JR., *Chief Engineer (Acting).*



DIVISION OF SANITARY ENGINEERING.

CONTENTS.

I. ORGANIZATION AND ADMINISTRATION, ... 1050
1. Regular Force, ... 1050
2. Local Health Officers, ... 1050

II. OFFICE WORK, ... 1052
3. Corporation Reports, ... 1052
4. Recorded Plans, ... 1053
5. Petitions and Complaints, ... 1053
6. Orders of Abatement, ... 1060
7. Draughting, ... 1061

III. ENGINEERING, ... 1063
8. Water Works and Sewerage Applications, ... 1063
9. Water Works and Filtration Permits and Decrees, ... 1070
10. Sewerage and Sewage Treatment Permits and Decrees, ... 1186
11. Design and Construction Section, ... 1236
12. Tests of Water and Sewage Treatment Plants, ... 1236
Water Filtration Plants, ... 1237
Table of Public Water Filtration Plants, ... 1240
Instructive Information Concerning Water Filtration in Pennsylvania, ... 1252
Sewage Treatment Plants, ... 1255
Table of Sewage Treatment Plants Operating in 1915, 1257
Water Sample Collections, ... 1266
13. Special Work, ... 1266
A. Erie Flood Disaster, ... 1267
B. Taste and Odor of Allegheny River Water at New Kensington, ... 1276
C. Industrial Waste Survey of the Clarion River Basin, 1279
D. Operation of the Water Filtration Plant of the Armstrong Water Company, ... 1316
E. Elimination of Gas Works Waste Pollution of the Schuylkill River, ... 1317
F. Storm Damage Investigations, ... 1318
G. National Guard Encampment Ground, Mt. Gretna, .. 1318

IV. FIELD INSPECTION, ... 1320
14. Improvement of Watersheds, ... 1320
15. General Sanitation, ... 1340
A. Summary of Inspections of Watersheds, Boroughs, etc., ... 1341
B. Inspection of County Fair, Camp Meeting, Amusement Park and Picnic Grounds and Lumber, Construction and Gypsy Camps, ... 1347

V. EPIDEMICS, ... 1357

VI. REFERENCES TO SPECIAL COUNSEL, ... 1484

VII. CONCLUSIONS, ... 1491

DIVISION OF SANITARY ENGINEERING.

The following is a detailed statement of the work carried on by the Division of Engineering of the State Department of Health during the year 1915, being the tenth annual report of the Division made since the creation of the Department of Health.

I. ORGANIZATION AND ADMINISTRATION.

Throughout the past year the operation of the Division has been conducted along the same lines and with a force organized under several sub-divisions as set forth in previous annual reports.

1. REGULAR FORCE.

On December 31, 1915, the regular force in the Division of Engineering consisted of one chief engineer (acting); twenty-two assistant engineers; four draftsmen; nine clerks; eleven stenographers and fifty-nine sanitary inspectors. A full list of these employes together with the names of all other persons who at any time in the year belonged to the regular force of the Division may be found in that part of the report of the Commissioner of Health which treats of the organization of the Department.

2. LOCAL HEALTH OFFICERS.

To facilitate the efficient administration of the work of the Department throughout the second class townships of the Commonwealth, 1,500 and over, wherein reside over two million six hundred thousand persons entirely without sanitary protection such as should be afforded by the boards of health of first class townships and boroughs of Pennsylvania, the Commissioner of Health, in the year 1907, had the State—sixty-six counties, excluding Philadelphia—divided into 733 sanitary districts, for each of which he appointed a health officer or resident sanitary agent.

In this division, so far as possible and practicable, township boundaries were followed. Usually a district comprises two or more townships, including the boroughs and cities therein. For instance, Logan Township, Blair County, including with it Altoona City and Juniata Borough, comprises a district.

The resident sanitary agent of the Commissioner of Health, in so far as his duties relate to the Medical Division of the Department, is confined to the territory wholly without the borough, city or first class township because such municipalities are required by law to have their own organized boards of health; but everywhere within his district, regardless of the municipal boundaries, the resident sanitary agent may be directed to investigate stream pollutions, water works and sewers, to render assistance to field officers, and to report to the chief of the Division of Engineering.

This work performed for the Division of Engineering of the Department appears elsewhere in this report.

II. OFFICE WORK.

The general office work necessary to carry on the operations of the Division, including general correspondence, recording corporation reports and plans required by law to be filed in the office of the Department or in compliance with decrees of the Commissioner, attention to petitions and complaints, issuing of orders for the abatement of nuisances and menaces and preparation of plans of watersheds for the use of sanitary inspectors in the field, comprises the subjects treated of in this part of the report under the head of office work. More or less office work is performed in connection with the sub-division of the organization and is mentioned elsewhere.

3. CORPORATION REPORTS.

Under the provisions of an Act of the General Assembly approved April 22, 1905 (P. L. 260), entitled "An Act to preserve the purity of the waters of the State, for the protection of the public health," it is the duty of every municipal corporation, private corporation, company and individual supplying or authorized to supply water to the public within the State to file with the Commissioner of Health a certified copy of the plans and surveys of the water works, with a description of the source from which the supply of water is derived.

Under the provisions of the same law, it is the duty of the public authorities having by law charge of the sewer system of any municipality in the State to file with the Commissioner of Health report of such a sewer system which shall comprise such facts and information as the Commissioner of Health may require.

Fourteen such reports were received. Five of these were from municipal corporations and nine were from private corporations.

The municipal returns comprised three water works reports and two sewerage reports.

The private corporation reports pertained to nine water works

The Department has now on file information obtained in this formal way relative to water works in nine hundred and thirteen places and relative to sewerage in four hundred and sixty-eight places.

These are the *initial reports* submitted with respect to water works and sewerage systems in operation at the time of the creation of the Department, and are exclusive of the reports submitted with applications for permits from the Commissioner of Health, which permits must be obtained before old systems can be legally extended or new ones constructed. These applications are mentioned elsewhere in this report.

4. RECORDED PLANS.

On December 31, 1915, there were nineteen thousand seven hundred and twenty-two plans officially registered in the Department, one thousand eight hundred and four having been added during the year; and of the grand total six thousand three hundred and seventy-seven accompanied water works and sewerage reports, of which two hundred and forty-four were added during the year; eight thousand five hundred and thirty accompanied water works and sewerage applications, of which one thousand and forty-three were added during the year; and four thousand eight hundred and fifteen were of a miscellaneous character, including some of the office working maps and those used in field engineering and inspection work, of which five hundred and seventeen were added during the year.

5. PETITIONS AND COMPLAINTS.

The Commissioner of Health, in addition to the powers conferred by the new law, has all the powers conferred and must perform all the duties heretofore imposed by law upon the former State Board of Health, or any member, committee or officer thereof, including the secretary. The work of supervising the general interest of the health and lives of the citizens of the Commonwealth has been done in part in answer to petitions and complaints and requests for advice. The Commissioner's instructions to give prompt attention to petitions, complaints and requests have been complied with in so far as the force of the Department made it possible.

Hundreds of communications relative to stream pollutions by sewage or by industrial waste, or with respect to insanitary conditions, inferior water supply or ice supply and respecting sewers, sewage disposal, water supply and general sanitation have received attention.

Seven hundred and fifty-three complaints and petitions have been acted upon during the year. Seven hundred and forty-five of these cases have been satisfactorily settled.

Thirty requests for advice relative to sewage, waste water, garbage, night-soil and dead animal disposal, and the location and construction of cesspools, privy vaults and pig pens, have been answered.

Common nuisances located within the territory of municipalities having organized boards of health, and made the subjects of complaints to the Commissioner of Health, have been referred by the Department to such local boards. There have been three hundred and seven references of this kind during the year; and at the close of the year all but one of these cases have been reported by the various boards of health as being abated. These nuisances are classified and their locations are given in the following lists:

Stream Pollution.

Bryn Mawr.
Chester.
Claysville.
Duncannon.
Greenville.
Hawley.
Mercersburg.
Port Carbon.
Quakertown.
Stoneboro.
Sunbury.
Three Springs.
Warren.

Sewage in Street Gutters.

Clarion (2).
Clifton Heights.
Coatesville.
Connoquenessing.
Cressona.
Dallastown.
Ephrata.
Evans City.
Export.
Hazleton.
Jeannette.
Lebanon.
Meyersdale.
Middletown.
Morton.
New Freedom.
Orwigsburg.
Penbrook.
Pennsburg.
Petersburg.
Philadelphia (3).
Ridley Twp., Delaware Co.
Royersford.
Shaler Twp., Allegheny Co.
Snow Shoe.
Spangler.
Tidioute.
Vanderbilt.
Waymart.
Westfield.
West York.
Yoe.

Defective Sewers.

Bloomsburg.
Carnegie.
Carrick.
Etna.
Hazleton.
Irvona.
Mt. Pleasant.
Pittsburgh.

Open Sewers.

Baldwin Twp., Allegheny Co.
Bradford.
Coraopolis.
Homestead.
New Kensington.
Pittsburgh.
Ramey.
St. Clair, Allegheny Co.

Insanitary Premises.

Albion.
Ambler.
Annville.
Altoona (4).
Ardmore (2).
Atglen.
Avalon.
Beaver.
Bellefonte (2).
Bellwood.
Berwick.
Bridgeport.
Bristol.
Brockwayville.
Butler.
Cardington.
Centralia.
Chambersburg.
Chartiers Twp., Allegheny Co.
Chester.
Crafton.
Cresson.
Coatesville.
Collingdale.
Confluence.
Conneautville.
Connellsville.
Conshohocken (3).
Dale (2).
Dallas.
Dallastown.
Darby (2).
DuBois (3).
DuBoistown.
Dunmore (2).
Dushore.
East Brady.
East Pittsburgh.
Elkland.
Ephrata (2).
Erie (2).
Exeter.
Ferndale.
Freedom (2).
Galeton.
Glassport.
Greencastle.
Greensboro.
Hanover Twp., Luzerne Co. (2).
Harrisburg.
Hatfield (2).
Hays.
Highspire.
Hollidaysburg.

Honesdale.
Huntingdon (2).
Irvona.
Jefferson Twp., Allegheny Co.
Jenkintown.
Jersey Shore.
Kennett Square.
Kingston.
LaMott.
Lancaster (4).
Lansdale.
Lawrenceville.
Lebanon (2).
Lemoyne.
Lewistown.
Lincoln Place (2).
Lock Haven.
Mahanoy City.
Manchester.
Manheim.
Marcus Hook.
Martinsburg.
Marysville.
Masontown (2).
McSherrystown.
Millersburg.
Milton.
Minersville (2).
Morrisville.
Mt. Pleasant (2).
Mt. Union.
New Brighton.
New Galilee.
New Paris.
Newtown.
Newville (2).
Nicholson.
Norristown.
Northumberland.
Oakdale.
Ohiopyle.
Old Forge (2).
Olyphant.
Orbisonia.
Osceola Mills.
Palmyra.
Philadelphia (3).
Philipsburg.
Pine Grove.
Pittsburgh (3).
Pittston (2).
Plymouth.
Port Clinton.
Quakertown (2).
Radnor Twp., Delaware Co.
Rankin.
Reading (7).
Robesonia.
Rochester.
Rockledge.
Royersford.
Rural Valley.
Rutledge.
Saegertown.
Saxton.
Schwenkville.
Scranton.
Sharon (2).
Sharon Hill.
Sharpsburg.
Shippenville.
Slatington.
South Bethlehem, Northampton Co.
South Greensburg.
Spring City.
Starrucca.
St. Clair, Schuylkill Co.
Stoneboro.
St. Petersburg.
Swatara Twp., Dauphin Co.
Swissvale.
Terre Hill.
Tidioute.
Tioga.
Tremont.
Ulysses.
Uniontown.
Upper Darby.
Warrior Run (2).
Washington.
Watsontown (2).
Waynesboro (4).
West Newton.
West Reading.
Westwood.
Wilkinsburg.
Wilmerding (2).
Windber.
Windgap.

Dumping Grounds.

Altoona.
Bellefonte.
Bethlehem.
Braddock.
Bradford (2).
Clearfield.
Coal Twp., Northumberland Co.
Dayton.
Dorranceton.
Elkland (2).
Forty Fort.
Gordon.
Hanover Twp., Luzerne Co.
Harrisburg.
Huntingdon.
Lebanon (2).
Mifflinburg.
Nicholson.
Orangeville.
Osceola Mills (2).
Prospect Park.
Sharpsburg.
State College.
Wilkes-Barre.
Wilkinsburg.

Swamp Land and Stagnant Water.

Bloomsburg.
Hazleton.
Liverpool.
Luzerne.
McEwansville.
Minersville.
Pitcairn.
Plainsville.
Rockledge.

Avondale.
McKees Rocks.
Mifflin.
Millersburg.
Mt. Union.

Four hundred and sixteen nuisance complaints and petitions were made the subject of special investigation and report by the Division of Sanitary Engineering, of which four hundred and nine have been abated. Forty-five of these commanded the services of engineers, field inspectors, and county medical inspectors, and three hundred and seventy-one commanded the services of the township health officers. Classified, these were as follows:

Nuisances in streams by sewage and industrial wastes,	47
Impure water and ice supplies,	41
Garbage and night-soil dumps,	32
Insanitary premises,	191
Nuisances in street gutters by sewage, etc.,	58
Dead animals,	36
Swamp land and stagnant water,	11
	416

The localities of the cases investigated are shown in the following statement:

Nuisances in Streams by Sewage and Industrial Wastes.

In Adams County:
Germany Township.
Gettysburg.
Union Township.
In Allegheny County:
Broughton.
East McKeesport.
In Armstrong County:
Templeton.
In Beaver County:
Harmony Township.
Rochester.
In Bedford County:
Broad Top Township.
In Bradford County:
Terry Township.
In Bucks County:
Bristol.
New Britain.
Richland Township.
In Centre County:
Benner Township.
Curtin Township.
Livonia.
In Chester County:
Paoli.
Valley Forge.
In Clearfield County:
Boggs Township.
Pine Township.
In Clinton County:
Lock Haven.
In Delaware County:
Chester Township.
Ithan.
Lansdowne.
Swarthmore.
In Huntingdon County:
Warriors Mark.
In Indiana County:
Hillsdale.
In Juniata County:
Mexico.
In Lackawanna County:
Simpson.
In Lancaster County:
Brecknock Township (2).
Pequea Township.
In Luzerne County:
Wilkes-Barre.
In McKean County:
Hamilton Township.
Hazelhurst.
In Monroe County:
Hamilton Township.
In Montgomery County:
Ambler.
Horsham Township.
Limerick Township.
William Penn.
In Montour County:
Mahoning Township.
In Perry County:
Loysville.
In Schuylkill County:
Reynolds.
Tremont Township.
West Penn Township.
In Tioga County:
Leetonia.
In Westmoreland County:
Hunkers.

Impure Water and Ice Supplies.

In Allegheny County:
O'Hara Township.
In Beaver County:
Industry Township.
In Berks County:
Mohnton.
Shillington.
In Bucks County:
Ferndale.
New Britain.
In Butler County:
Jackson Township.
In Chester County:
Whitford.
In Clarion County:
New Mayville.
Tylersburg.
In Dauphin County:
Susquehanna Township.
In Fayette County:
Belle Vernon.
In Franklin County:
Fayetteville.
In Fulton County:
McConnellsburg.
In Huntingdon County:
Mt. Union.
In Jefferson County:
Delaware Township.
In Lackawanna County:
Clarks Summit.
In Luzerne County:
Conyngham Township.
Hazle Township.
Mountain Grove.
In Lycoming County:
Montoursville.
Muncy Creek Township.
In Mercer County:
Sandy Lake.
In Monroe County:
Canadensis.
In Montgomery County:
Franconia Township.
Hatboro.
Ironbridge.
White Marsh Township.
In Schuylkill County:
Minersville.
Pine Grove Township.
Schuylkill Haven (2).
In Snyder County:
Beaver Springs.
In Somerset County:
Lavansville.
Somerset.
In Tioga County:
Morris Run.
In Union County:
Kelly Township.
In Washington County:
Eighty-Four.
In Wyoming County:
Tunkhannock.
In York County:
West Manchester Township.
West Manheim Township.

Garbage and Night-Soil Dumps.

In Allegheny County:
O'Hara Township.
Patton Township (4).
Versailles Township.
In Armstrong County:
South Buffalo Township.
In Beaver County:
Hookstown.
Industry Township.
In Bradford County:
Athens Township.
In Bucks County:
Warminster.
In Cambria County:
Stony Creek Township.
In Centre County:
Potter Township.
In Chester County:
Paoli.
In Clearfield County:
Lawrence Township.
In Cumberland County:
Lower Allen Township.
In Dauphin County:
Susquehanna Township.
In Delaware County:
Upper Chichester Township.
In Fayette County:
Connellsville.
Connellsville Township.
In Greene County:
Franklin Township.
In Lycoming County:
Loyalsock.
In Mercer County:
Hickory Township.
In Montgomery County:
Norriton Township.
Willow Grove.
In Northampton County:
Wilson Township (2).
In Somerset County:
Black Township.
Shade Township.
In Venango County:
Sugar Creek Township.
In Washington County:
East Pike Run Township.
In York County:
Manchester Township.

Insanitary Premises.

In Adams County:
Hampton.
New Oxford.
In Allegheny County:
Coulter.
Mifflin Township (2).
Neville Township.
Patton Township.
Ross Township (2).
Unity.
West View.
In Armstrong County:
Yatesboro.
In Beaver County:
Daugherty Township.
North Sewickley.
White Township.
In Bedford County:
Cessna.
Imler.
In Berks County:
Cumru Township.
Hyde Park.
Monocacy.
Spring Township.
Strausstown.
In Bradford County:
Powell.
In Bucks County:
Buckingham.
East Rockhill Township.
Fallsington (2).
Lahaska.
Landisville.
In Butler County:
Butler Township.
Cabot (2).
In Cambria County:
Croyle Township.
Dale.
Elmora (2).
Scalp Level.
In Carbon County:
Franklin Township.
In Centre County:
Boalsburg.
Howard Township.
In Chester County:
Berwyn (5).
Devon.
Tredyffrin Township.
Valley Township (2).
In Clarion County:
Leeper.
In Clearfield County:
Kylertown.
Lawrence Township (2).
Luthersburg.
Sandy Township (2).
Woodland.
In Cumberland County:
East Pennsboro Township.
Enola.
Lower Allen Township (5).
Shippensburg Township.
In Dauphin County:
Derry Church.
Hershey.
Pleasant View.
Progress.
Susquehanna Township (4).
Swatara Township.
Wiconisco.
In Delaware County:
Lenni.
Upper Providence Township (2).
In Erie County:
Edinboro.
Girard.
In Fayette County:
Gans.
Kifertown.
Snydertown.
Uniontown (2).
Upper Tyrone Township.
Whitsett.
In Franklin County:
Southampton Township.
In Greene County:
Rices Landing.
In Indiana County:
Centre Township.
In Jefferson County:
Timblin.
In Juniata County:
Milford Township.
Van Dyke.
In Lackawanna County:
Childs.
In Lancaster County:
East Hempfield Township.
Florin.
Lancaster Township.
Manheim Township.
Mastersonville.
Millersville.
Rapho Township.
West Lampeter Township.
In Lebanon County:
Cleona.
North Lebanon Township (6).
Schaefferstown.
In Lehigh County:
Rittersville.
In Luzerne County:
Conyngham.
Dupont.
Hazle Township.
Lake Township.
Lehman Township.
Pittston Township (2).
In Lycoming County:
Loyalsock Township (3).
In McKean County:
Betula.
Hazelhurst.
In Mercer County:
Hempfield Township.
Hickory Township.
In Monroe County:
Mt. Pocono.
In Montgomery County:
Fort Washington (2).
Gilbertsville.
Hatfield Township.
Horsham.
Ironbridge.
Jeffersonville.
Lower Pottsgrove Township (2).
Mont Clare.
Oaks.
Plymouth Township (3).
Upper Dublin Township.
Upper Gwynedd Township.

In Northampton County:
Forks Township.
Heckstown.
Palmer Township.
Upper Nazareth Township.
Washington Township.
Wilson Township.
In Perry County:
Liverpool Township.
In Potter County:
Genesee.
Harrison Township.
Keating Township.
In Schuylkill County:
Cass Township.
Girardville.
Nuremberg.
Yatesville.
In Snyder County:
McClure.
Shamokin Dam.
In Tioga County:
Nelson Township.
In Union County:
East Buffalo Township.
In Venango County:
Sugar Creek Township.
In Warren County:
Russell.
In Washington County:
Canton Township (2).
Elderville.
Elrama.
Midway.
Mt. Pleasant Township.
New Eagle.
North Strabane Township.
Speers.
In Wayne County:
Poyntelle.
In Westmoreland County:
Allegheny Township.
Hempfield Township.
Mt. Pleasant Township (2).
North Huntingdon Township (3).
Penn Township.
Rostraver Township.
Ruffsdale.
Sewickley Township.
In Wyoming County:
Meshoppen Township.
Noxen.
In York County:
Black Rock.
Penn Township.
Spring Garden Township (2).
West Manchester Township (2).

Nuisances in Street Gutters by Sewage.

In Adams County:
Latimore Township.
In Allegheny County:
Collier Township.
Hites.
North Braddock.
Ross Township (2).
Tyre.
In Armstrong County:
Mahoning.
In Beaver County:
Hookstown.
In Berks County:
Morgantown:
In Bradford County:
Herrickville.
In Bucks County:
Edison.
Southampton Township.
In Cambria County:
Blandburg.
Croyle Township.
In Carbon County:
Lower Towamensing Township (2).
In Centre County:
Pine Grove Mills.
In Clarion County:
Fairmount City.
Lucinda.
In Clearfield County:
Lawrence Township (2).
Sandy Township.
In Columbia County:
Aristes.
In Crawford County:
West Mead Township.
In Cumberland County:
Lower Allen Township.
In Dauphin County:
Susquehanna Township (2).
In Delaware County:
Chester Township (2).
Glen Riddle.
Tinicum.
In Fayette County:
North Union Township.
Spring Hill Township.
In Franklin County:
Rouzerville.
In Jefferson County:
Rathmel.
In Lancaster County:
Silver Spring.
In Lebanon County:
Belle Grove.
South Lebanon Township.
In Lehigh County:
Salisbury Township.
In Lycoming County:
Loyalsock Township.
In Monroe County:
Tobyhanna.
In Montgomery County:
Fort Washington.
Lansdale.
Norriton Township.
Plymouth Township.
In Perry County:
Andersonburg.
In Pike County:
Lehman Township.
In Potter County:
Harrison Valley.
In Snyder County:
Swineford.
In Wayne County:
Clinton Township.
In Westmoreland County:
Allegheny Township.
Hempfield Township.
Jacobs Creek.
Lockport.
North Huntingdon Township.
In York County:
Spring Garden Township (2).

Dead Animals.

In Beaver County:
Patterson Township.
In Blair County:
McKee.
In Bradford County:
Columbia Township.
Snedekerville.
Windham Township.
In Bucks County:
Aquetong.
In Butler County:
Centre Township.
Cranberry Township.
In Centre County:
Harris Township.
In Chester County:
Berwyn.
In Clearfield County:
Decatur Township.
In Columbia County:
Jackson Township:
In Cumberland County:
East Pennsboro Township.
Keiters Mill.
Shippensburg Township.
In Dauphin County:
Edgemont.
In Elk County:
Carlo.
In Fayette County:
Georges Township.
In Franklin County:
Peters Township.
In Indiana County:
Rossiter.
Washington Township.
In Lawrence County:
Wilmington Township.
In Lycoming County:
Linden.
Okome.
In Mifflin County:
Wayne Township.
In Montgomery County:
Lower Pottsgrove Township.
In Northampton County:
Lower Nazareth Township.
In Northumberland County:
Trevorton.
In Somerset County:
Quemahoning Township.
In Union County:
Buffalo Township.
In Venango County:
Pine Grove Township.
In Warren County:
Pine Grove Township.
In Westmoreland County:
Hempfield Township.
Mt. Pleasant Township.
In Wyoming County:
Noxen.
In York County:
Penn Township.

Swamp Land and Stagnant Water.

In Adams County:
New Oxford.
In Berks County:
Hyde Park.
In Bucks County:
Lahaska.
In Clearfield County:
Chester Hill.
In Cumberland County:
Lower Allen Township.
Monroe Township.
In Lebanon County:
Reistville.
In Lycoming County:
Clinton Township (3).
In Snyder County:
Beavertown.

6. ORDERS OF ABATEMENT.

To do away with possible causes of disease and mortality in the way of public menaces and nuisances, more especially outside of the boroughs and cities and within the watersheds of streams drawn upon for water supplies, the Commissioner of Health has the power and authority to order such nuisances and menaces to be abated and removed. Upon examination made by any persons duly authorized by the Commissioner of Health so to do, information as to the facts is submitted to this office, and thereupon an order to abate may be issued. These orders are signed by the Commissioner of Health and served by the field or local health officers. Many hundreds of properties have been put in sanitary condition upon inspection and the verbal request of the field or local health officer, without resort to a formal order of abatement.

Twelve thousand and seventeen orders have been prepared for issuance during the year. Except for twelve, these notices have been made out as the result of inspections by the Department's field officers and have been for the abatement of nuisances polluting or menacing the purity of streams from which public water supplies are drawn. The twelve orders referred to have been for the abatement of insanitary conditions in general, mostly reported by local health officers. A more detailed statement of these orders of abatement is given elsewhere in this report.

7. DRAUGHTING.

The work of the draughting room has continued as in preceding years and is carried out as part of the work of the Design and Construction Section of the Division of Engineering. It consists chiefly of map tracing and chart making for the various divisions of the Department, as well as work relative to the design and construction of water works, sewerage systems and miscellaneous engineering work at the State sanatoria. The preparation of such features of the Department's exhibit at the Panama-Pacific Exposition as scale drawings, charts and diagrams occupied much of the draughtsmen's time in January, February and March of the current year as well as in the latter part of 1914. As in previous years the work of compiling township atlases of the various counties in the State was continued, making use of the U. S. Geological Survey sheets, published maps and atlases, and the reports of the field inspectors. Besides this regular work, county, township, borough and village maps were made for the use of field inspectors and for the Medical Division and the Division of Distribution of Biological Products.

The distribution of the time of the draughtsmen during the year was as follows:

Designs and construction,	10.7%
Division of Engineering township maps, etc.,	56.0%
Other divisions, charts, tables, etc.,	12.4%
Panama-Pacific Exposition charts, etc.,	20.9%
Total,	100.0%

The maps, drawings and charts made during the year are as follows:

Plans for design and construction work,	80
Borough maps for inspection work (drawn),	191
Borough maps for inspection work (revised),	207
Township maps for inspection work (drawn),	53
Township maps for inspection work (revised),	240
Miscellaneous maps and charts for Engineering Division,	120
Charts, tables, etc., for other divisions,	55
Charts, diagrams, etc., for Panama-Pacific Exposition,	80
Total,	1,026

The following table gives in detail the number of maps made of various political divisions of each county:

SUMMARY OF TOWNSHIP, BOROUGH AND VILLAGE MAPS MADE IN 1915 BY COUNTIES.

	Boroughs and Villages.		Townships.	
	Drawn.	Revised.	Drawn.	Revised.
Adams,	0	0	0	1
Armstrong,	1	6	1	7
Berks,	4	5	1	2
Blair,	0	0	0	3
Bradford,	0	0	1	0
Bucks,	2	5	0	4
Butler,	3	0	0	2
Cambria,	3	2	1	5
Cameron,	0	0	0	4
Carbon,	2	1	0	0
Chester,	0	0	2	4
Clarion,	3	0	0	0
Clinton,	1	0	0	8
Columbia,	0	7	0	7
Cumberland,	4	5	1	4
Dauphin,	2	3	0	0
Delaware,	24	28	1	9
Erie,	0	3	4	4
Fayette,	0	0	6	5
Forest,	0	1	0	0
Franklin,	1	7	2	13
Fulton,	0	4	0	7
Greene,	0	0	0	4
Huntingdon,	1	2	0	0
Jefferson,	0	0	0	2
Lackawanna,	9	2	0	8
Lawrence,	3	0	0	0
Lebanon,	3	4	3	4
Lehigh,	6	2	0	1
Luzerne,	44	21	5	28
Monroe,	0	0	1	1
Montgomery,	0	0	0	3
Montour,	1	1	0	8
Northumberland,	4	13	2	15
Perry,	11	6	3	11
Pike,	1	4	2	10
Potter,	4	8	1	6
Schuylkill,	4	3	4	9
Somerset,	0	0	0	3
Susquehanna,	2	5	1	1
Tioga,	7	6	1	1
Warren,	0	1	4	14
Washington,	2	3	0	3
Wayne,	4	6	5	13
Westmoreland,	40	42	1	5
York,	1	1	0	1
Totals,	191	207	53	240

III. ENGINEERING.

8. WATERWORKS AND SEWERAGE APPLICATIONS.

The review of plans of proposed sewerage and water works systems and of extensions to existing systems, and the making of investigations and reports in relation thereto, have been important parts of the work performed by the Engineering Division.

There were three hundred and thirty-three sewerage and water works applications received by the Department and recorded during the year; one hundred and sixty-three pertaining to water works and one hundred and seventy pertaining to sewerage. Of the water works applications forty were sent in by municipalities and one hundred and twenty-three by private corporations. Of the sewerage applications one hundred and thirty-two were made by municipalities and thirty-eight by private corporations and individuals.

The water works applications may be classified as follows: Sixty-six for ground water sources; thirteen for both ground and surface waters; and eighty-four for surface water sources. In sixteen cases the applications provided for the purification by filtration of the surface water sources. In fourteen cases the application provided for chemical disinfection of the supplies, in four instances where the water was already being filtered. In thirty-four instances the surface waters were being filtered at the time the applications for extensions were made, namely, in the following cases:

WATER WORKS APPLICATIONS WHERE SUPPLY WAS BEING FILTERED.

1. Armstrong Water Company.
2. Beaver Valley Water Company.
3. Butler Water Company.
4. City of New Castle Water Company.
5. Coatesville (first application).
6. Coatesville (second application).
7. College Hill Borough Water Company.
8. Connellsville Water Company.
9. Danville.
10. Danville State Hospital for the Insane.
11. Dauphin Consolidated Water Supply Company.
12. Fallston Water Company.
13. Freedom Water Company.
14. Haysville Water Company.
15. Hershey Water Company.
16. Holmesburg and Disston Water Companies.
17. Home Water Company.
18. Media.
19. Natrona Water Company, (first application).
20. Natrona Water Company (second application).
21. New Brighton Water Company.
22. Norristown Insurance and Water Company.
23. North Rochester Water Company.
24. Patterson Heights Water Company.
25. Philadelphia (first application).

26. Philadelphia (second application).
27. Pottstown Gas and Water Company.
28. Reserve Township.
29. Ridgway.
30. Sharon Water Works Company.
31. Union Water Company.
32. Valley Water Company of Rochester.
33. Waynesburg Water Company.
34. West Side Water Company.

Numbers 1, 8, 9, 11, 18, 19, 22 and 29 were applications for improvements or additions to existing filtration plants; number 30 was an application for a modern filtration plant; number 28 was an application concerning a supply from the Pittsburgh municipal water works; numbers 7, 12, 13, 21, 23, 24, 31, 32 and 34 were applications concerning supplies from the Beaver Valley Water Company.

The applications for permits to supply water from new water filter plants are given below:

WATER WORKS APPLICATIONS PERTAINING TO PROPOSED FILTER PLANTS.

1. Brownsville Water Company (first application).
2. Brownsville Water Company (second application).
3. Citizens Water Company of Canton.
4. Conemaugh and Franklin Water Company.
5. Jenner-Quemahoning Coal Company.
6. Jersey Shore Water Company.
7. Langhorne Spring Water Company (first application).
8. Langhorne Spring Water Company (second application).
9. Mount Penn Suburban Water Company.
10. Pennsylvania Water and Power Company.
11. Pittsburgh Coal Company.
12. Reading Suburban Water Company.
13. Sharon Water Works Company.
14. Vesta Coal Company.
15. West Grove.
16. West Grove Water Company.

Numbers 5, 9, 10 and 11 are pending at the end of the year. Number 1 was dismissed and the second application taken under consideration. Number 16 was dismissed and the application from the municipal authorities (number 15) was taken under consideration and discussed in a letter.

The applications for approval of chemical disinfecting plants are as follows:

WATER WORKS APPLICATIONS PERTAINING TO CHEMICAL DISINFECTING PLANTS.

1. Bear Gap Water Company.
2. Butler Water Company.
3. Cherry Tree Water Company.
4. City of New Castle Water Company.
5. Conemaugh and Franklin Water Company.
6. Duquesne.
7. General Water Company.
8. Holmesburg and Disston Water Companies.
9. Johnstown Water Company.
10. Kutztown Water Company.
11. Malvern.
12. Mount Penn Suburban Water Company.
13. Natrona Water Company.
14. Stroudsburg Water Supply Company.

Number 10 was covered by a letter granting approval subject to the plant being operated in a satisfactory manner. Number 11 was received at the close of the year and is pending. Numbers 2, 4, 8 and 13 concern existing filter plants.

The sewerage applications may be classified as follows: Forty-nine for sanitary sewers to take sewage only, eleven of which were comprehensive studies; fifty-four for combined sewers to receive both sewage and storm water; fifty-two for sewage treatment works, six of which included comprehensive sewer systems, and fifteen for extension of time.

The applications for sewage treatment plants are given below:

APPLICATIONS FOR NEW SEWAGE TREATMENT PLANTS OR IMPROVEMENTS TO OLD PLANTS.

1. American Zinc and Chemical Company.
2. Beaver County Home Farm.
3. Bellwood.
4. Birdsboro Steel Foundry and Machine Company.
5. Brackenridge.
6. Bradford.
7. Bradford County Almshouse (first application).
8. Bradford County Almshouse (second application).
9. Bradford County Almshouse (third application).
10. Brittain, A. R. et al.
11. Bureau of Mines of the Department of the Interior.
12. Carbondale Machine Company.
13. Cheltenham Township.
14. Cheyney Training School for Teachers (first application).
15. Cheyney Training School for Teachers (second application).
16. Contagious Disease Hospital of Scranton City (first application).
17. Contagious Disease Hospital of Scranton City (second application).
18. Cressman, Philip.
19. Diefendorf, F. G.
20. Dormont.
21. Freeport.
22. Galen Mountain Company (first application).
23. Galen Mountain Company (second application).
24. Glen Mills Schools (Boys' Department).
25. Glen Mills Schools (Girls' Department).
26. Greenville (first application).
27. Greenville (second application).
28. Johnstown.
29. Lebanon.
30. Lehigh Car, Wheel and Axle Works.
31. Lewistown.
32. Linde Air Products Company.
33. Luzerne County Industrial School for Boys.
34. Marysville.
35. Monarch Park Hotel Company.
36. North East.
37. Pennsylvania Railroad Company.
38. Philadelphia.
39. Plains Township School Board.
40. Pittsburgh Bridge and Iron Works.
41. Pole, W. S.
42. Punxsutawney.
43. Reading.
44. Rutledge.
45. Smethport.
46. South Brownsville.
47. State College.
48. State Hospital for the Insane at Farview.
49. Upper Darby Township.
50. Villa Maria Academy.
51. Western Pennsylvania Hospital for Insane at Dixmont.
52. York.

Of the applications in the foregoing list nine have not been finally acted upon, namely, numbers 2, 6, 29, 30, 31, 32, 42, 50 and 51; thirteen were taken up in letters addressed to the applicants by the Commissioner of Health discussing the designs submitted, namely, numbers 1, 10, 11, 14, 17, 23, 26, 33, 37, 40, 41, 44 and 48; two were dismissed as noted below, namely numbers 8 and 16.

The applications for comprehensive sewer systems are given below:

APPLICATIONS FOR COMPREHENSIVE SANITARY SEWER SYSTEMS.

1. Bellwood.
2. Cheltenham Township.
3. Danville.
4. Emsworth.
5. Exeter.
6. Jersey Shore.
7. Mar Lin Land Company.
8. Marysville.
9. Old Forge.
10. Philadelphia.
11. Punxsutawney.
12. Sellersville.
13. South Brownsville.
14. South Connellsville.
15. Union City.
16. Westfield.
17. Williamsport.

Of the applications in the foregoing list five have not been finally acted upon, namely, numbers 6, 7, 8, 11 and 17. Preliminary studies or limited sub-district plans only are covered by numbers 6, 9, 11 and 17. The Philadelphia application presents the results of studies for a comprehensive system conducted since 1907. Detail plans are submitted to the Department for approval before sewers are constructed.

Places making applications for extension of time in which to fulfill the terms of the decrees issued by the Commissioner of Health and to continue the discharge of sewage into waters of the State, are as follows:

SEWERAGE APPLICATIONS FOR EXTENSION OF TIME.

1. Bradford.
2. Cambridge Springs.
3. Chester.
4. Corry.
5. Dorranceton.
6. Houtzdale.
7. Milton.
8. Old Forge.
9. Rouseville.
10. Sayre.
11. South Fork.
12. Union City.
13. Uniontown.
14. West Pittsburgh Realty Company.
15. York.

Of the applications in the foregoing list numbers 7, 8, 9, 11, 12 and 15 have been acted upon, number 9 by letter, the others by formal decrees or permits. The remainder of the applications have not been

definitely acted upon, pending the submission of evidence of progress and good faith on the part of the applicants to comply with the requirements of the decrees of the Department.

Of the three hundred and thirty-three applications recorded during the year three hundred and five have been examined and reported upon, also four left over from 1907, three from 1908, six from 1909, sixteen from 1910, fourteen from 1911, twenty-four from 1912, sixteen from 1913 and thirty-five from 1914, making a total of four hundred and twenty-three applications investigated and reported upon during the year.

Certain applications of the following public and private corporations were dismissed or withdrawn. Those referring to sewerage projects were as follows: Scranton, received in 1906; Wm. E. Louder, Fernbaugh Township, Juniata County, received in 1907; D. B. Hoffer, Muhlenberg Township, Berks County, received in 1909; H. M. McClure, Selinsgrove, and H. C. Walley, Lower Burrell Township, Westmoreland County, received in 1911; Mahon and Schwingle, Philadelphia, received in 1914; Bradford County Almshouse, West Burlington Township, and Contagious Disease Hospital of Scranton City, received in 1915. Those referring to water works were as follows: Armstrong Water Company, Kittanning and Aughwick Water Company, Mt. Union, received in 1907; Armstrong Water Company, Kittanning and Beaver Valley Water Company, Beaver County, received in 1908; Barnesboro Water Company and Philadelphia and Bristol Water Company, received in 1909; George B. Rine, Jr., Center Township, Snyder County, received in 1910; Ramey Water Company, received in 1912; Bear Gap Water Company, Mt. Carmel Township, Northumberland County, Punxsutawney Water Company and Towanda Water Works, received in 1913; Mt. Jewett Water Company, received in 1914; Brownsville Water Company and West Grove Water Company, received in 1915. A total of twenty-two dismissals.

The two hundred and eighty-nine permits and decrees issued during the year, one-hundred and sixty-six for water works and one hundred and twenty-three for sewerage, and twenty-four less formal letters, seven relative to water works and seventeen relative to sewerage, embody the decisions and requirements of the Department relative to the one hundred and ninety water works and two hundred and four sewerage applications acted upon. They include also a few decrees issued because of existing conditions and not in response to applications. A more complete discussion and summary of the water works permits and decrees and sewerage and sewage disposal permits and decrees will be found under these respective heads.

A summary of the water works and sewerage applications received and acted upon since the inauguration of the Department is given below:

SUMMARY OF APPLICATIONS RECEIVED AND ACTED UPON 1905-1915.

Applications received in 1905-06	155
Applications received in 1907	236
Applications received in 1908	306
Applications received in 1909	324
Applications received in 1910	286
Applications received in 1911	292
Applications received in 1912	340
Applications received in 1913	252
Applications received in 1914	302
Applications received in 1915	333
Total	2,826

Applications acted upon in 1905-06	74
Applications acted upon in 1907	159
Applications acted upon in 1908	266
Applications acted upon in 1909	278
Applications acted upon in 1910	282
Applications acted upon in 1911	227
Applications acted upon in 1912	303
Applications acted upon in 1913	230
Applications acted upon in 1914	336
Applications acted upon in 1915	394
Total	2,549

There were one hundred and sixty-five applications pending at the end of 1915, one hundred and twelve having been either dismissed or withdrawn. Of the applications pending, sixty-nine were for water works and ninety-six for sewerage and sewage treatment works. Of these, forty of the water works and fifty-two of the sewerage were investigated and reported upon, leaving seventy-three to be investigated.

The two thousand eight hundred and twenty-six applications comprise one thousand one hundred and thirty for water works and one thousand six hundred and ninety-six for sewerage. Of the former two hundred and eighty-five were for municipal and eight hundred and forty-five for private plants, and of the latter one thousand four hundred and sixty-one were for municipal and two hundred and thirty-five for private works.

It may be interesting to note that three hundred and sixty-six of the water works applications concerned ground sources, forty-seven both ground and surface, and seven hundred and seventeen surface sources; further, that in one hundred and seventy-four instances the surface waters were being filtered and that in one hundred and thirty-nine instances filtration was contemplated for surface water and in one instance for ground waters. The applications as received by years are shown in the following table:

WATER WORKS APPLICATIONS 1905-1915.

Year of Receipt.	Sources of Water Supplies.				Filtration.		
	Surface.	Ground and Surface.	Ground.	Total.	Existing.	Proposed.	Total.
1905-06,	23	----------	11	34	1	2	3
1907,	47	----------	24	71	6	11	17
1908,	75	----------	32	107	26	11	37
1909,	97	----------	27	124	23	12	35
1910,	79	4	35	118	12	20	32
1911,	55	7	55	117	4	20	24
1912,	97	6	48	151	33	23	56
1913,	69	10	26	105	17	17	34
1914,	91	7	42	140	18	8	26
1915,	84	13	66	163	34	16	50
Totals,	717	47	369	1,130	174	140	314

So it appears that in three hundred and fourteen instances plans for new water filtration plants or plans for extensions to existing plants or to the methods of operation have been carefully considered and passed upon, or will engage the attention of the Department at an early date.

With respect to the sewerage applications received since the inauguration of the Department five hundred and forty-one relate to sanitary sewers, six hundred and sixty-seven to combined sewers, three hundred and seventy-two to sewage treatment works and one hundred and sixteen have been for extension of time. The applications as received by years are shown in the following table:

SEWERAGE AND SEWAGE TREATMENT APPLICATIONS 1905-1915.

Class of Application.	1905 — 1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	Total.
Sanitary sewers,	39	68	81	48	52	45	57	52	50	49	541
Combined sewers,	68	71	82	112	71	69	49	42	49	54	667
Treatment works,	14	26	33	29	33	48	50	38	49	52	372
Extension of time,	----------	----------	3	11	12	13	33	15	14	15	116
Total,	121	165	199	200	168	175	189	147	162	170	1,696

It appears that in three hundred and seventy-two instances sewage treatment problems have been investigated and passed upon or will engage the attention of the Department at an early date.

WATER WORKS.

9. WATER WORKS AND FILTRATION PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH.

This work has been done under an Act of the General Assembly approved April 22, 1905 (P. L. 260), entitled "An Act to preserve the purity of the waters of the State, for the protection of the public health." the term "waters of the State" is defined by the act to include all streams and springs and all bodies of surface and ground water, whether natural or artificial, within the boundaries of the State.

The virgin waters of the State in their devious courses underground and through the upland streams and main river channels gather many impurities, industrial wastes of great variety, and germ-laden excrementitious matter of human and animal origin. To preserve their purity absolutely is impossible. The law aims at the protection of waters yet undefiled and the continuing improvement of the present conditions, and the attainment of a degree of practical purity of those now polluted. Measures advanced or instituted under the direction and supervision of the State Department of Health and under the law for the preservation of the purity of the waters of the State may be subdivided into those for the prevention and regulation of the discharge of polluting matter into the State water and for the purification of such discharges, set forth in other parts of this report; and those measures pertaining particularly to the protection, collection, transportation and purification of the State waters appropriated for supply to the public, the subjects of the water works permits and decrees here discussed.

The above law prescribes that no water works system for the supply of water to the public shall be constructed or extended and that no additional source of supply shall be secured without a written permit from the Commissioner of Health. The investigations and inquiries of the State Department of Health in the consideration of issuing such permits have been confined to determining whether the supply or the circumstances of operation of the water works system are or are likely to become prejudicial to public health, and what measures for the protection or purification of the supply shall be established.

An intelligent examination of and decision upon an application for a permit for the extension of water works demands, in each particular case, full information regarding the character and magnitude

of the source of supply and the manner and means of collecting, conveying, purifying, if necessary, and distributing the water, and the capacity of the works therefor. This usually necessitates a personal investigation by a trained officer of the Department.

The need for detailed information regarding the source of supply and all features which might influence its purity under varying conditions and during different seasons and all kinds of weather is self-evident. The magnitude of the source and the capacity of the water works system are also important from the standpoint of public health; for if insufficient, even if only during emergencies such as the demands of a fire or occurrence of a drought, the temporary and reckless introduction of a polluted emergency supply may result or the populace may be driven to the use of springs and old wells in a built-up community where such sources are extremely liable to pollution from neighboring privy vaults and cesspools. Again, it is imperative to have at hand the full, detailed information regarding the construction of the water works system, the location of all valves and drain and blow-off connections, because the unlooked-for introduction of pollution into some part of the works may necessitate the speedy flushing and draining of all or part of the system, the cutting out of some particular source and the readjustment of the system under a new arrangement of operation. Before it was required by law that the detailed plans of all water works systems should be on file in the office of the State Department of Health, it often happened that the local water works officials did not have this information available for their own use. Especially was this true of the smaller systems. In many such instances the works were erected or at least extensions, valves and detail arrangements were put in from time to time under the personal direction of a local superintendent without plans, and much of the information regarding the system was lost to owners of the water works with the passing of the superintendent. In connection with the subject it may also be important to know about the private wells and springs in the town.

The permits and decrees issued to owners of the water works are based and conditioned upon the construction of the works and their operation in strict accordance with the plans and proposed methods of operation filed for approval, or in accordance with specifically required modifications thereof. It is therefore imperative that complete plans and a report of the water works be filed with the Department, as required by the above law, and that each application be accompanied by detailed plans and a report of the proposed works. The permits and decrees further require the fulfillment of such specific stipulations as the information gathered by the Department indicates should be carried out in order that the proposed sources of supply or extensions to existing water works may not be prejudicial

to public health. In addition to the requirements for the efficient operation of the works these stipulations refer to provision for the removal of the causes of possible pollution of the sources of water supply and to protective measures such as the sanitary patrol of the drainage areas.

The preparation of these plans (of which blue-prints are acceptable) in accordance with first-class modern engineering practice, and their prompt submission at the time of filing the application greatly facilitate and expedite the work of the Department in acting upon the proposition. Where the supply comes from a comparatively small stream not many miles below the head waters, so that a house-to-house patrol of the drainage area can be maintained and the methods of sewage disposal and possible sources of pollution can be regulated with sufficient certainty to constitute some degree of protection of the purity of the supply, then the plans should include a map of the drainage area showing the principal topographical features, all houses, roads, streams and other sources of possible pollution.

WATER WORKS PERMITS AND DECREES ISSUED DURING 1915.

With respect to the one hundred and sixty-six water works permits and decrees issued during the year, seventy-eight relate to surface sources, forty-nine to ground sources and thirty-nine to a combination of the two. Complete purification is required of the surface sources in thirty-six cases and of the ground water sources in two cases. Chemical disinfection is required in forty cases for use in connection with emergency or auxiliary sources, or to meet special conditions, or as a temporary safeguard pending the installation of complete purification plants. The thirty-eight cases where complete purification is required or approved are as follows:

WATER WORKS PERMITS AND DECREES ISSUED DURING 1915 APPROVING OR REQUIRING FILTRATION.

1. Armstrong Water Company.
2. Beaver Valley Water Company.
3. Bedford Borough.
4. Brownsville Water Company.
5. Canawacta Water Supply Company.
6. Carlisle Gas and Water Company.
7. Citizens Water Company of Canton.
8. Conemaugh and Franklin Water Company.
9. Connellsville Water Company.
10. Danville Borough.
11. Dauphin Consolidated Water Supply Company (Enola Division).
12. Haysville Borough.
13. Home Water Company (Montgomery County).
14. Jefferson and Clearfield Coal and Iron Company.
15. Jersey Shore Water Company.
16. Johnsonburg Water Company.
17. Langhorne Spring Water Company.
18. Lehigh Water Company (Easton).
19. Ligonier Borough.
20. Littlestown Borough.
21. Media Borough.
22. Mercer Water Company.

23. Morrisville Borough.
24. Mount Penn Suburban Water Company.
25. Mount Union Water Company.
26. Nantyglo Water Company.
27. Natrona Water Company.
28. Norristown Insurance and Water Company.
29. Philadelphia City.
30. Reading Suburban Water Company.
31. Ridgway Borough.
32. Sharon Water Works Company.
33. Summit Water Supply Company.
34. Vesta Coal Company.
35. Waymart Water Company.
36. Waynesboro Water Company.
37. Waynesburg Water Company.
38. Williamsburg Borough.

Approval of plans for the introduction of new or the extension of existing filters is given in numbers 1, 2, 4, 8, 9, 11, 12, 13, 14, 15, 17, 27, 28, 29, 30, 34 and 37.

The forty cases in which permits and decrees relate to emergency and temporary chemical disinfection are as follows:

WATER WORKS PERMITS AND DECREES ISSUED IN 1915 RELATING TO EMERGENCY AND TEMPORARY CHEMICAL DISINFECTION.

1. Allegheny Water Company.
2. Allentown City.
3. Bear Gap Water Company.
4. Beaver Valley Water Company (with filtration).
5. Butler Water Company (with filtration).
6. Canawacta Water Supply Company.
7. Cherry Tree Water Company.
8. Citizens Water Company of Canton (with filtration).
9. Citizens Water Company of Scottdale.
10. City of New Castle Water Company (with filtration).
11. Coatesville Borough (with filtration).
12. Connellsville Water Company (with filtration).
13. Danville Borough (with filtration).
14. Drake, D. D.
15. Fayetteville Water Company.
16. General Water Company.
17. Hanover and McSherrystown Water Company.
18. Haysville Borough (with filtration).
19. Holmesburg and Disston Water Companies (with filtration).
20. Johnstown Water Company.
21. Lewistown and Reedsville Water Company.
22. Ligonier Borough.
23. Malvern Borough.
24. Media Borough (with filtration).
25. Morrisville Borough.
26. Mount Penn Suburban Water Company.
27. Mount Union Water Company.
28. Nantyglo Water Company.
29. Natrona Water Company (with filtration).
30. Norristown Insurance and Water Company (with filtration).
31. Oil City.
32. Portage Water Company.
33. State Hospital for the Insane, Mahoning Township, Montour County (with filtration).
34. Stroudsburg Water Supply Company.
35. Vesta Coal Company (with filtration).
36. Waymart Water Company.
37. Waynesburg Water Company.
38. Westmoreland Water Company.
39. Williamsburg Borough.
40. Wyoming Valley Water Supply Company (Hazleton Dept.)

The application of a chemical disinfectant to domestic water supplies is recognized as an emergency measure readily introduced and affording a considerable degree of protection to the users of a dangerous water. This treatment, however, is not considered satisfactory as a permanent substitute for the filtration of a polluted water. Moreover it yet remains to be ascertained how serious a detriment the human system may experience from the indefinitely continued use of such a water.

SUMMARY OF ALL PERMITS AND DECREES CONCERNING WATER WORKS.

There have been eight hundred and ninety-five water works permits and decrees issued since the creation of the State Department of Health.

WATER WORKS PERMITS AND DECREES ISSUED—1905-1915.

1905-06,	23	1911,	78
1907,	25	1912,	116
1908,	72	1913,	66
1909,	84	1914,	162
1910,	103	1915,	166
		Total,	895

In some instances several permits were issued to the same applicant. The eight hundred and ninety-five permits or decrees have involved five hundred and fifty-two owners of water works systems including fifteen water companies whose systems, rights and obligations have passed to other owners, which latter owners have since received permits or decrees covering the entire system. The owners may be classified thus:

Municipal water works systems,	122	Other institutions,	5
Water works corporations,	365	Associations and private citizens,	36
State institutions,	8	Industrial works,	16
		Total,	552

There are seven hundred and eighty-five cities, boroughs and townships in Pennsylvania now being supplied with water by water works systems that have been made the subjects of decrees by the Department. A water company may supply several towns and in a number of municipalities more than one water company is operating as will appear in the detail statement that follows:

EXPLANATION OF TABLE OF PERMITS AND DECREES FOR WATER WORKS ISSUED UP TO DECEMBER 31, 1915.

In the first column following the table are entered alphabetically, with consecutive numbers, the cities, boroughs and townships comprising the charter territories and water supplied districts of the water works systems covered by the permits and decrees of the State

Department of Health. To indicate cases of municipal ownership consecutive numbers are entered in the second column opposite the names of municipal owners. In cases of private ownership the names of the municipalities are followed by the names of the water works owners in parentheses, except that where the names of the municipalities begin the titles of the water works owners, the latter are omitted in the first column and entered opposite the former in the third and fourth columns.

The third and fourth columns contain, respectively, and arranged alphabetically, the names of private water works corporations and private owners not incorporated as water companies, with consecutive numbers and followed by the names of the municipalities comprising the chartered territories and water supply districts, except where these latter are shown immediately opposite in the first column; the number of permits and decrees issued and entered in the last columns opposite the name of water works owner where it appears in alphabetical order.

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915.

Municipalities Supplied (Numbered): also Important Villages and Post Offices.	Classification of Water Works.			Permits and Decrees.									
	Municipal.	Water Company.	Miscellaneous.	1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
1 Abington Township, Montgomery Co. (East Ogontz Water Co., unincorporated) (Springfield Consolidated Water Co.) (Weldon Water Co. Supply from Moreland Spring Water Co.)													
2 Addison Township, Somerset Co. (Gravity Water Co.)													
			1 Adjutant General's Dept. (Nat. Guard Camp Grounds, Mt. Gretna, South Londonderry Township, Lebanon Co.)									1	1
3 Akron, Lancaster Co.,	1							1			1		2
4 Albion, Erie Co. (See also Albion Water Co.)	2						1						1
		1 Albion Water Co. (Albion),			1								1
5 Alburtis, Lehigh Co.,	3											1	1
6 Aldan, Delaware Co. (Springfield Water Co.)													
7 Aleppo Township, Allegheny Co. (Haysville Water Co.)													

		2 Allegheny Water Co. (Logan Township, Blair Co., and part of Altoona).											1	1
		Allegheny Valley Water Co. (purchased Tarentum Water Co. q. v.)												
Allison Park, Hampton Township, Allegheny Co. (see also Wyland, John F.)		3 Allison Park Water Co.,						1						1
8 Allentown (city), Lehigh Co.,	4												1	1
Althouse Village, Brothers Valley Township, Somerset Co. (Consolidated Coal Co.)														
9 Altoona (city), Blair Co. (see also Allegheny Water Co.)	5										2			2
			2 Alwine, Jerry (Johnstown, Cambria Co.)		1									1
10 Ambridge, Beaver Co.,	6									1	2			3
Annville Village, Lebanon Co. (N. & S. Annville Townships).		4 Annville Water Co.,		2	2	2								6
		5 Anthracite Water Co. (Supplies Frackville, Gilberton and Shenandoah boroughs, and Mahanoy and West Mahanoy twps., Schuylkill Co.)								1	1	1		3
11 Apollo, Armstrong Co.,		6 Apollo Water Works Co. (also supplies Leechburg, Armstrong Co.)								1				1
12 Arendtsville, Adams Co.,		7 Arendtsville Water Co.,				1								1
13 Armagc Township, Mifflin Co. (Lewistown and Reedsville Water Co.)														
		8 Armstrong Water Co. (bought Citizens Water Co. of Kittanning q. v.) (First permit issued to Citizens Water Co. of Kittanning).		1									1	2

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915—Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Classification of Water Works.			Permits and Decrees.									
	Municipal.	Water Company.	Miscellaneous.	1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
14 Arnold, Westmoreland Co. (Kensington Water Co.)	----	----	----	----	----	----	----	----	----	----	----	----	----
Arnot (P. O.) Bloss Township, Tioga Co.	----	9 Arnot Water Co.,	----	----	----	----	----	----	----	----	----	1	1
15 Ashland, Schuylkill Co.,	7	----	----	----	----	----	----	----	1	----	2	----	3
16 Ashley, Luzerne Co. (Spring Brook Water Supply Co.)	----	----	----	----	----	----	----	----	----	----	----	----	----
Aspers (P. O.) Menallen Township, Adams Co.	----	10 Aspers Water Co.,	----	----	----	----	----	----	----	----	1	----	1
17 Athens, Bradford Co. (Fairview Water Co.)	----	----	----	----	----	----	----	----	----	----	----	----	----
18 Augusta Township, Northumberland Co. (Sunbury Water Co.)	----	----	----	----	----	----	----	----	----	----	----	----	----
19 Austin, Potter Co.,	8	----	----	1	----	----	----	2	----	----	----	----	3
20 Avalon, Allegheny Co. (Ohio Valley Water Co.)	----	----	----	----	----	----	----	----	----	----	----	----	----
21 Avis, Clinton Co. (Chatham Water Co.)	----	----	----	----	----	----	----	----	----	----	----	----	----
22 Avoca, Luzerne Co. (Spring Brook Water Supply Co.)	----	----	----	----	----	----	----	----	----	----	----	----	----
23 Avonmore, Westmoreland Co.,	9	----	----	----	----	----	1	----	----	----	----	----	1
24 Baden, Beaver Co.,	10	----	----	1	----	----	----	----	----	----	----	----	1

		11 Bald Eagle Water Co. (Tyrone, Blair Co.)				1						1
25 Baldwin Township, Allegheny Co. (S. Pittsburgh Water Co.)	----											
26 Bangor, Northampton Co.,	----	12 Bangor Water Co. (also supplies Roseto, Northampton Co.)					1	1	2			4
27 Banks Township, Carbon Co. (Wyoming Valley Water Supply Co., Hazleton Dept.)	----											
28 Barnesboro, Cambria Co.,	11										1	1
		13 Barnesboro Water Co. (Merged in 1913 into Northern Cambria Water Co. q. v. System in Barnesboro purchased by borough in 1913).			1							1
29 Barrett Township, Monroe Co. (Buck Hill Water Co.)	----											
30 Bath, Northampton Co.,	12						1			2		3
		14 Bear Gap Water Co. (Supplies in Marion Heights, Mt. Carmel and Kulpmont village, Mt. Carmel Township, Northumberland Co.)									2	2
		15 Beaver Creek Water Co. (Swatara Township, Dauphin Co.)				1						1
Beaverdale (P. O.) Summerhill Township, Cambria Co. (Summit Water Supply Co.)	----											
31 Beaver Falls, Beaver Co. (Union Water Co., supply from Beaver Valley Water Co.)	----											
32 Beaver Meadow, Carbon Co. (Hazleton Water Co.)	----											

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915—Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Classification of Water Works.			Permits and Decrees.										
	Municipal.	Water Company.	Miscellaneous.	1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
33 Beavertown, Snyder Co.,	13											1	1
		16 Beaver Valley Water Co. (Supplies in Beaver Co., Beaver Falls, Bridgewater, College Hill, East Rochester, Fallston, Freedom, New Brighton, Patterson Heights and Rochester Boroughs and Rochester Township, including North Rochester Village) (Pipes in Conway purchased in 1913 by borough).						1	1		1	3
34 Beech View, Allegheny Co. (South Pittsburgh Water Co.)													
35 Bedford, Bedford Co.,	14											1	1
36 Bellevue, Allegheny Co. (Ohio Valley Water Co.)													
37 Ben Avon, Allegheny Co. (Ohio Valley Water Co.)													
38 Bensalem Township, Bucks Co. (Trevose Manor Spring Water Co., Holmesburg and Disston Water Companies).													
		17 Bens Creek Water Co. (Portage Township, Cambria Co.)		1									1
39 Benson, Somerset Co. (S. P. Berkebile) (W. A. Snably).													
40 Benton, Columbia Co.,		18 Benton Water Co.,								1			1

		3 Berkebile, S. P. (Benson Borough and Conemaugh Township, Somerset Co.							1				1
	19 Berry Springs Water Co. (Villages of Lenkersville and Wiconisco Terrace, Upper Paxton Township, Dauphin Co.)											1	1
41 Berwick, Columbia Co.,	20 Berwick Water Co.,				1		1	1	2				5
42 Bethel Township, Allegheny Co. (S. Pittsburgh Water Co.)													
43 Bethlehem, Northampton Co. (see also Beth. City Water Co. for "West Bethlehem").	15		1	1					1			1	4
	21 Bethlehem City Water Co. (Sup. in Lehigh Co., part of Bethlehem, known as W. Bethlehem and Fountain Hill Boroughs and Hanover and Salisbury Townships in Northampton Co., Northampton Heights and S. Bethlehem Boroughs and Lower Saucon Township. In Hanover Township supplies Homeopathic State Hospital for the Insane.								1				1
		4 Bethlehem Steel Co. (South Bethlehem, Northampton Co.)							1				1
44 Big Beaver Township, Beaver Co. (Koppel Water Co.)													
45 Bigler Township, Clearfield Co. Madera Water Co. Auxiliary supply from Ramey Water Co.) Ramey Water Co. same source as Houtzdale Water Co.)													
46 Biglerville, Adams Co.,	22 Biglerville Water Co.,			1							1		2
47 Big Run, Jefferson Co. (Punxsutawney Water Co.)													
48 Black Township, Somerset Co. (Pure Mountain Water Co.)													

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915—Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Municipal.	Classification of Water Works.		Permits and Decrees.									
		Water Company.	Miscellaneous.	1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
49 Black Creek Township, Luzerne Co. (Wyoming Valley Water Co. Hazleton Dept.)	----												
50 Blacklick Township, Cambria Co. (Marie Water Co.) (Nanty-Glo Water Co.)	----												
Blackwood Village, Reilly Township, Schuylkill Co. (Wyoming Valley Water Supply Co. Blackwood Dept.)	----	23 Blackwood Water Co. Received permit in 1907. (Now Blackwood Dept. Wyoming Valley Water Supply Co., Reilly Township, Schuylkill Co.)				*							*
51 Blairsville, Indiana Co.,	16								1				1
		24 Blandburg Water Co. (Reads Township, Cambria Co.)					1						1
52 Bloomfield (New Bloomfield P. O.), Perry Co.	----	25 Bloomfield Water & Sewer Co.,				1							1
53 Bloomsburg, Columbia Co.,	----	26 Bloomsburg Water Co.,							2	1			3
54 Bloss Township, Tioga Co. (Arnot Water Co.)	----												
55 Blossburg, Tioga Co.,	----	27 Blossburg Water Co.,			1								1
		28 Blue Mountain Consolidated Water Co. (Supplies in Monroe Co., Hamilton and Ross Townships and in Northampton Co., Nazareth, Pen Argyl and Wind Gap Boroughs and Bushkill, Lower Nazareth, Plainfield, Upper Nazareth and Washington Townships.)							1	1			2

		29 Blue Ridge Water Supply Co. (Washington Township, Franklin Co.)		1										1
56 Blythe Township, Schuylkill Co. (Silver Creek Water Co. Part of supply from Crystal Water Co.)														
Boalsburg, town of, Harris Township, Centre Co.		30 Boalsburg Water Co.,					1							1
Boiling Springs, S. Middleton Township, Cumberland Co. (See Bucher, J. C.)														
			5 Boyer, J. Calvin (Monroe Township, Snyder Co.)				1							1
			6 Boyer, J. Calvin (Perry Township, Snyder Co.)				1							1
57 Boyertown, Berks Co.,	17											1		1
58 Brackenridge, Allegheny Co. (Tarentum Water Co.)														
59 Braddock Township, Allegheny Co. (Penna. Water Co.)														
60 Bradford (city), McKean Co.,	18			1		1	1							3
61 Bradford Township, McKean Co. (South Bradford Water Co.)														
		31 Bradford County Water Co. (Sayre),		1										1
62 Briar Creek Township, Columbia Co.,		32 Briar Creek Water Supply Co.,				1								1
			7 Brickel, B. W. (Dallas, Luzerne Co.)			1								1
63 Bridgeport, Montgomery Co. (Norristown Insurance & Water Co.)														
64 Bridgeton Township, Bucks Co. (Raymond D. Stone).														

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915—Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Classification of Water Works.			Permits and Decrees.									
	Municipal.	Water Company.	Miscellaneous.	1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
65 Bridgeville, Allegheny Co. (S. Pittsburgh Water Co.)													
66 Bridgewater (W. Bridgewater P. O.) Beaver Co. (Beaver Valley Water Co.)													
		33 Bright Run Water Co. (Butler Township, Schuylkill Co.) (Supplies also through subsidiary companies which have received permits, Gilberton and Girardville, Schuylkill Co.)					1						1
67 Brisbin, Clearfield Co. (West Houtzdale Water Co. same source as Houtzdale Water Co.)													
68 Bristol, Bucks Co. (See also Bristol Water Co. (Borough took over plant of Bristol Water Co. May 14, 1912. Permits* to Bristol Water Co. plant purchased by borough).	19			*1			*2		1	2	1		7
69 Bristol Township, Bucks Co. (Holmesburg and Disston Water Companies).													
		34 Bristol Water Co. (Received permits in 1906 and 1910. Plant purchased by Bristol Borough.)		*			*						*
70 Brockwayville, Jefferson Co.,		35 Brockway Crystal Water Co.,					1					1	2
71 Brookville, Jefferson Co.,		36 Brookville Water Co. (Also supplies Rose Township, Jefferson Co.) (Plant sold to borough January, 1912.)					2						2

72 Brothers Valley Township, Somerset Co. (Consolidation Coal Co.)											
73 Brown Township, Mifflin Co. (Lewistown and Reedsville Water Co.)											
74 Brownsville, Fayette Co.,	37 Brownsville Water Co. (Also supplies S. Brownsville, W. Brownsville, parts of Brownsville and Luzerne Township, Fayette Co., and E. Pike Run Township, Washington Co.)								2	2	
75 Brownsville Township, Fayette Co. (Brownsville Water Co.)											
		8 Bucher, J. C., (Boiling Springs, S. Middleton Township, Cumberland Co.)			1					1	
Buck Hill Falls (P. O), Barrett Township, Monroe Co.	38 Buck Hill Water Co.,								2		2
Buck Mountain (P. O.), Mahanoy Township, Schuylkill Co. Wyoming Valley Water Supply Co. Hazleton Dept.)											
76 Burnham, Mifflin Co. (Lewistown and and Reedsville Water Co.)											
77 Burrell Township, Indiana Co. (Josephine Water Co.)											
78 Bushkill Township, Northampton Co. (Blue Mountain Consolidated Water Co.)											
	39 Bunday's Water Co. (Linesville, Crawford Co.)								1	1	
79 Butler, Butler Co.,	40 Butler Water Co.,				1				1	2	
80 Butler Township, Schuylkill Co. (Girard Water Co.) (Bright Run Water Co.) (Citizens Water Co. of Gordon.)	41 Butler Township Water Co. (Butler Township, Schuylkill Co.)							1		1	

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915—Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Classification of Water Works.			Permits and Decrees.									
	Municipal.	Water Company.	Miscellaneous.	1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
81 Caernarvon Township, Berks Co. (Morgantown Water Co.)	----												
		42 Cairnbrook Water Co. (Shade Township, Somerset Co.)								1	1	----	2
82 California, Washington Co.,	----	43 California Water Co.,									1	----	1
Calumet (P. O.) Mt. Pleasant Township, Westmoreland Co. (Sewickley Water Co.)	----												
83 Cambria Township, Cambria Co. (Colver Water Co.)	----												
84 Cambridge Springs, Crawford Co.,	20			2	----	----	----	----	----	----	----	----	2
85 Camp Hill, Cumberland Co. (Riverton Consolidated Water Co.)	----												
		44 Canawacta Water Supply Co. (Susquehanna and Lanesboro, Susquehanna Co.)										1	1
86 Canonsburg, Washington Co. (North Strabane Water Co.)	----												
87 Canton, Bradford Co. (Citizens Water Co. of Canton).	----												
88 Carlisle, Cumberland Co.,	----	45 Carlisle Gas & Water Co.,										1	1
89 Carnegie, Allegheny Co. (South Pittsburgh Water Co.)	----												

90 Carrick, Allegheny Co. (South Pittsburgh Water Co.)														
91 Carroll Township, Washington Co. (Donora Water Co. consolidated 1912 and now part of Tri-Cities Water Co.)														
92 Cass Township, Schuylkill Co. (Minersville Water Co.)														
93 Catasauqua, Lehigh Co. (See also Clear Springs Water Co.)	21													2
94 Catawissa, Columbia Co.,		46 Catawissa Water Co.,						1		1		1		3
95 Cecil Township, Washington Co. (Citizens Water Co. of Cecil Township, supply from Citizens Water Co. of McDonald) (Penna. Training School) (North Strabane Water Co.)														
Center Moreland (P. O.), North Moreland Township, Wyoming Co.		47 Center Moreland Water Co.,											1	1
96 Chambersburg, Franklin Co.,	22		1							1				2
97 Chapman Township, Clinton Co. (Absalom Farwell) (Hammersley Water Co.)														
98 Charlerol, Washington Co.,		48 Charlerol Water Co. (Consolidated Aug. 15, 1912, and now part of Tri-Cities Water Co.)						1						1
99 Chartiers Township, Allegheny Co. (South Pittsburgh Water Co.)														
		49 Chatham Water Co. (Avis, Clinton Co.)											1	1
100 Cheltenham Township, Montgomery Co. (Ogontz Water Co. supply from Moreland Spring Water Co.) (Springfield Consolidated Water Co.)														
101 Cherry Tree, Indiana Co.,		50 Cherry Tree Water Co.,											2	2

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915—Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Municipal.	Classification of Water Works.		Permits and Decrees.									
		Water Company.	Miscellaneous.	1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
102 Chester (city), Delaware Co. (New Chester Water Co.)	----												
103 Chester Township, Delaware Co. (Edgemont Water Co.) (Supply from New Chester Water Co.)	----												
104 Cheswick, Allegheny Co. (Tarentum Water Co.)	----												
		51 Chichester Water Co. (Supply from New Chester Water Co.) (Marcus Hook, Delaware Co.)			1	1							2
Chinchilla (P. O.), South Abington Township, Lackawanna Co. (W. G. Hall.)	----												
105 Christiana, Lancaster Co.,	----	52 Christiana Gravity Water Co.,						1	1				2
		53 Citizens Water and Gas Co. of Williamsport. (Received permit* in 1910.) (Now part of Williamsport Water Co.)					*						*
		54 Citizens Water Co. of Canton (Bradford Co.)								1		1	2
		55 Citizens Water Co. of Cecil Township. (Supply from Citizens Water Co. of McDonald) (Cecil Township, Washington Co.)										1	1

		56 Citizens Water Co. of College Hill (College Hill Borough and White Township, Beaver Co.)										1	1
		57 Citizens Water Co. of Confluence (Confluence, Somerset Co.)						1					1
		58 Citizens Water Co. of Gordon (Gordon Borough and Butler Township, Schuylkill Co.)				1						1	2
		59 Citizens Water Co. of Kittanning. (Received permit* in 1906.) (Sold to Armstrong Water Co.) (Kittanning and Wickboro Boroughs and Rayburn Township, Armstrong Co.)	*										*
		60 Citizens Water Co. of McDonald, Pa. McDonald Washington Co.) (Supplies through subsidiary companies which have received permits.) (Cecil and Mount Pleasant Townships, Washington Co. and N. Fayette and S. Fayette Townships, Allegheny Co.)									2		2
		61 Citizens Water Co. of Mt. Pleasant Township. (Supply from Citizens Water Co. of McDonald) (Mt. Pleasant Township, Washington Co.)										1	1
		62 Citizens Water Co. of New Bethlehem. (Supplies South Bethlehem, Armstrong Co. and New Bethlehem, Clarion Co.)			1								1
		63 Citizens Water Co. of North Fayette Township. (Supply from Citizens Water Co. of McDonald) (North Fayette Township, Allegheny Co.)									1		1
		64 Citizens Water Co. of Robinson Township. (Robinson Township, Washington Co.)									1		1
		65 Citizens Water Co. of Scottdale. (Scottdale, Westmoreland Co.)									1	2	3

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915—Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Municipal.	Classification of Water Works.		Permits and Decrees.									
		Water Company.	Miscellaneous.	1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
		66 Citizens Water Co. of S. Fayette Township. (Supply from Citizens Water Co. of McDonald) (S. Fayette Township, Allegheny Co.)										1	1
		67 Citizens Water Co. of Washington, Pa. (Washington, Washington Co.) (Supplies also subsidiary company which has received permits, S. Strabane Township, Washington Co.)									1		1
		68 City of New Castle Water Co. (New Castle, Lawrence Co.)							1			1	2
		69 City Water Co. of Scranton (Scranton.)										1	1
106 Clairton, Allegheny Co. (Monongahela Valley Water Co.)													
107 Clarion, Clarion Co.,		70 Clarion Water Co.,		1		2		1					4
108 Clearfield, Clearfield Co.,		71 Clearfield Water Co.,				1							1
		72 Clear Springs Water Co. (Supplies in Lehigh Co., Catasauqua and Coplay Boroughs and Whitehall Township, in Northampton and N. Catasauqua Boroughs).								1			1
109 Clifton Heights, Delaware Co. (Springfield Water Co.)													

		73 Clymer Water Co. of Indiana (Indiana, Indiana Co.)		1		1	1							3
110 Coaldale, Schuylkill Co. (Panther Valley Water Co.)														
111 Coal Township, Northumberland Co. (Roaring Creek Water Co.)														
112 Coatesville, Chester Co.,	23								3		1	2	6
113 College Hill, Beaver Co. (Citizens Water Co. of College Hill.)		74 College Hill Borough Water Co. (Supply from Beaver Valley Water Co.)										1	1
114 College Township, Centre Co. (University Water Co.)													
115 Collier Township, Allegheny Co. (South Pittsburgh Water Co.)													
116 Collingdale, Delaware Co. (Springfield Water Co.)													
117 Columbia, Lancaster Co.,		75 Columbia Water Co. (Columbia, Lancaster Co.)									1		1
Colver (P. O.), Cambria Township, Cambria Co.		76 Colver Water Co. (Operates system authorized by permit of 1911* to Ebensburg Coal Co.)						*1			1		2
118 Colwyn, Delaware Co. (Springfield Water Co.)													
119 Conemaugh Township, Somerset Co., (S. P. Berkebile) (W. A. Snably).													
		77 Conemaugh and Franklin Water Co. (East Conemaugh and Franklin Boroughs and E. Conemaugh Township, Cambria Co.)									1	1	2
120 Conewago Township, Adams Co. (Hanover and McSherrystown Water Co.)													
			9 Conemaugh Smokeless Coal Co. (E. Wheatfield Twp., Cambria Co.)									1	1

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915—Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Municipal.	Classification of Water Works.		Permits and Decrees.									
		Water Company.	Miscellaneous.	1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
121 Confluence, Somerset Co. (Citizens Water Co. of Confluence).													
122 Conneaut Lake, Crawford Co.,	24							1					1
123 Conneautville, Crawford Co.,	25						1	1					2
124 Connellsville (city), Fayette Co.,		78 Connellsville Water Co.,									1	1	2
125 Connellsville Township, Fayette Co., (Trotter Water Co.)													
126 Conshohocken, Montgomery Co. (Springfield Consolidated Water Co.)													
		79 Consolidated Water Co. of Coudersport (Couders, Potter Co.) (Bought Citizens Water Co., Oct. 16, 1906).							1				1
		80 Consolidated Water Supply Co. (Forest City, Susquehanna Co., and in Lackawanna Co., Vandling Borough and the villages of Browndale, Warren Lot and Richmondale in Fell Township).									1		1
			10 Consolidation Coal Co. (Althouse Village, Brothers Valley Township, Somerset Co.)								1		1
			11 Consolidation Coal Co. (Jenner Township, Somerset Co.)							1		1	2

127 Conway, Beaver Co.,	26				1								1
128 Conyngham Township, Luzerne Co. (Glen Brook Water Co.)													
129 Coolbaugh Township, Monroe Co. (Fairview Water Co.)													
Coolbaugh Village, Middle Smithfield Township, Monroe Co. (D. D. Drake).													
130 Coopersburg, Lehigh Co.,	27							1					1
131 Coplay, Lehigh Co. (Clear Spring Water Co.)													
132 Coraopolis, Allegheny Co.,	28									1			1
133 Coudersport, Potter Co. (Consolidated Water Co. of Coudersport—bought Citizens Water Co., Oct. 16, 1906).													
134 Courtdale, Luzerne Co. (Spring Brook Water Supply Co.)													
135 Crafton, Allegheny Co. (South Pittsburgh Water Co.)													
Crenshaw Village, Snyder Township, Jefferson Co. (Brockway Crystal Water Co.)													
136 Cresson, Cambria Co. (Supply from Summit Water Supply Co.) (See also Cresson Water Co.)	29						1						1
137 Cresson Township, Cambria Co.,		81 Cresson Water Co. (Also supplies Cresson and Sankertown, Cambria Co.)					1						1
138 Cressona, Schuylkill Co. (Schuylkill Haven Gas and Water Co.)													
			12 Crosby Gas Co. (Newerf Village, Norwich Township, McKean Co.)	1									1

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915—Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Classification of Water Works.			Permits and Decrees.									
	Municipal.	Water Company.	Miscellaneous.	1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
		82 Crystal Springs Park Water Co. Highland Township, Elk Co.) (James City (P. O.)									1		1
139 Cumberland Valley Township, Bedford Co. (Evitts Creek Water Co.) (Also supplies Cumberland, Md.)													
			13 Curtis, J. G. Leather Co. (Ludlow, Hamilton Township, McKean Co.)				1						1
140 Dale, Cambria Co. (Johnstown Water Co.)													
141 Dallas, Luzerne Co. (See also B. W. Bickel).		83 Dallas Water Co.,		1									1
142 Dallastown, York Co. (York Co. Consolidated Water Co.)													
Dalmatia (P. O.), Lower Mahanoy Township, Northumberland Co.		84 Dalmatia Water Co.,										1	1
143 Dalton, Lackawanna Co. (N. Abington Water Co.)													
144 Danville, Montour Co. (See also State Hospital).	30								1	1		1	3
145 Darby, Delaware Co. (Springfield Water Co.)													

146 Darby Township, Delaware Co. (Springfield Water Co.)													
147 Dauphin, Dauphin Co.,		85 Dauphin Consolidated Water Supply Co., Dauphin Division (Also supplies Middle Paxton and Susquehanna Townships, Dauphin Co.)			1	1						1	3
		86 Dauphin Consolidated Water Supply Co., Enola Division (Enola (P. O.) E. Pennsboro Township, Cumberland Co.)										1	1
148 Dawson, Fayette Co.,	31							1					1
149 Dayton, Armstrong Co.,	32									1			1
150 Delano Township, Schuylkill Co. (Mahanoy City Water Co. now in Hazleton Dept., Wyoming Valley Water Supply Co.)													
151 Delaware Township, Pike Co. (Dingman's Ferry Water Co.)													
152 Delaware Water Gap, Monroe Co. (D. D. Drake).													
153 Denver, Lancaster Co.,	33					1							1
Deringer Village, Black Creek Township, Luzerne Co. (Wyoming Valley Water Co., Hazleton Dept.)													
154 Derry, Westmoreland Co. (Westmoreland Water Co.) (Derry Division.)		87 Derry Water Co. (Permit in 1914 prior to purchase by Westmoreland Water Co. q. v.)								*			*
155 Derry Township, Dauphin Co. (Hershey Water Co.)													
156 Derry Township, Mifflin Co. (Lewistown and Reedsville Water Co.)													
		88 Diamond Water Co. of Hazleton (Hazleton and W. Hazleton, Luzerne Co.)				1				1	1		3

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915- Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Municipal.	Classification of Water Works.		Permits and Decrees.									
		Water Company.	Miscellaneous.	1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
		89 Dickerson Run Water Co. (Supplies New Dickerson Run Village, Dunbar and Franklin Township, Fayette Co.)						1					1
157 Dickson City (borough), Lackawanna Co. (Scranton Gas and Water Co.)													
158 Dillsburg, York Co.,		90 Dillsburg Water Co.,					1						1
Dingman's Ferry, Delaware Township, Pike Co.		91 Dingman's Ferry Water Co.,					1						1
159 Donora, Washington Co.,		92 Donora Water Co. (Consolidated Aug. 15, 1912, and now part of Tri-Cities Water Co.)											
160 Dorranceton, Luzerne Co. (Spring Brook Water Supply Co.)													
161 Dover, York Co.,	34			1									1
162 Doylestown, Bucks Co.,	35						1						1
			14 Drake, D. D. (Delaware Water Gap, Monroe Co.)									1	1
163 Dravosburg, Allegheny Co. (Monongahela Valley Water Co.)													
164 DuBois, Clearfield Co. (See also John E. DuBois).	36					1							1

			15 DuBois, John E., (DuBois).			1							1
165 Dunbar Township, Fayette Co. (Dickerson Run Water Co.) (Trotter Water Co.)													
166 Duncan Township, Tioga Co. (Fall Brook Coal Co.)													
167 Duncannon, Perry Co. (Trout Run Water Co.)													
168 Duryea, Luzerne Co. (Spring Brook Water Supply Co.)													
169 Duquesne, Allegheny Co.,	37										1	1	2
170 Eaglesmere, Sullivan Co.,		93 Eaglesmere Water Co.,					1						1
171 East Bethlehem Township, Washington Co. (Vesta Coal Co.)													
172 East Brady, Clarion Co.,		94 East Brady Water Works Co.,					1		1				2
173 East Conemaugh, Cambria Co. (Conemaugh & Franklin Water Co.)													
174 East Conemaugh Township, Cambria Co. (Conemaugh & Franklin Water Co.													
175 East Deer Township, Allegheny Co. (Tarentum Water Co.)													
176 East Donegal Township, Lancaster Co.		95 East Donegal Township Water Co. (Supply from Florin Water Co.)							1				1
			16 Eastern Penna. State Inst. for the Feeble-Minded and Epileptic (E. Vincent Township, near Spring City, Chester Co.)	1							1		2
177 East Greenville, Montgomery Co.,	38								1	1			2
178 East Huntingdon Township, Westmoreland Co. (Trotter Water Co.)													

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915—Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Municipal.	Classification of Water Works.		Permits and Decrees.									
		Water Company.	Miscellaneous.	1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
179 East McKeesport, Allegheny Co.,	----	96 East McKeesport Water Co. (Also supplies North Versailles Township and Wall and Wilmerding Boroughs, Allegheny Co.)		1									1
180 East Mauch Chunk, Carbon Co. (Mauch Chunk Water Co.)	----												
		97 East Mere Water Co. (for East End Village, Swatara Township, Dauphin Co.) (Received permit* 1909. Plant sold to Harrisburg and company ceased to be active Jan. 2, 1910.)				*							*
			17 East Ogontz Water Co. (Abington Township, Montgomery Co.), McKinley P. O.) (uninc.)								1		1
181 East Pike Run Township, Washington Co. (Brownsville Water Co.)	----												
182 Easton (city), Northampton Co. (Lehigh Water Co.) (South Easton Water Co.)	----												
183 East Pennsboro Township, Cumberland Co. (Dauphin Consolidated Water Supply Co.) (Riverton Consolidated Water Co.) (H. M. Hoerner) (E. B. Leiby) (D. S. Seitz and F. C. Sites).	----												

184 East Pittsburgh, Allegheny Co. (Penna. Water Co.)														
185 East Rochester, Beaver Co. (N. Rochester Water Co. supply from Beaver Valley Water Co.)														
186 Easttown Township, Chester Co. (Springfield Consolidated Water Co.)														
187 East Stroudsburg, Monroe Co.,	39											2		2
188 East Union Township, Schuylkill Co. (Mahanoy City Water Co., now in Hazleton Dept. Wyoming Valley Water Supply Co.)														
189 East Vincent Township, Chester Co., (Eastern Penna. State Inst., near Spring City).														
190 East Wheatfield Township, Cambria Co. (Conemaugh Smokeless Coal Co.)														
191 East Whiteland Township, Chester Co. (Springfield Consolidated Water Co.)														
192 Ebensburg, Cambria Co.,	40											1		1
		18 Ebensburg Coal Co. (Permit* 1911 for system at Colver, Cambria Co., taken over in 1913 my Colver Water Co.)						*						*
193 Eddystone, Delaware Co. (Ridley Water Co. supply from New Chester Water Co.) (Springfield Water Co.)														
		98 Edgemont Water Co. (Supply from New Chester Water Co.) (Chester Township, Delaware Co.)			1	1								2
194 Edgewood, Allegheny Co. (Penna. Water Co.)														

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915—Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Classification of Water Works.			Permits and Decrees.									
	Municipal.	Water Company.	Miscellaneous.	1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
195 Edgeworth, Allegheny Co.,		99 Edgeworth Water Co. (Also supplies Leetsdale and village of Fair Oaks (P. O.), Leet Township, Allegheny Co.)									1		1
196 Edinboro, Erie Co.,	41						1	1					2
197 Edwardsville, Luzerne Co. (Spring Brook Water Supply Co.)													
198 Eldred, McKean Co. (Galeton-Eldred Water Co.)													
199 Elizabeth, Allegheny Co. (Monongahela Valley Water Co.)													
200 Ellwood City (borough),		100 Ellwood Water Co. (Also supplies Wayne Township, Lawrence Co.)		1	1				1		1		4
201 Emaus, Lehigh Co. (See also Mountain Water Co.)	42							2		1			3
202 Emlenton, Venango Co.,		101 Emlenton Water Co.,			1						2		3
203 Emporium, Cameron Co.,		102 Emporium Water Co.,					2		1		1		4
204 Emsworth, Allegheny Co. (Ohio Valley Water Co.)													
Enola (P. O.) East Pennsboro Township, Cumberland Co. (Dauphin Consolidated Water Supply Co.)													
205 Ephrata, Lancaster Co.,	43							1					1

206 Erie (city), Erie Co.,	44								1				1
Ernest (P. O.), Rayne Township, Indiana Co. (Rochester and Pittsburgh Coal and Iron Co.)													
207 Everett, Bedford Co.,		103 Everett Water Co.,									1		1
		104 Evitts Creek Water Co. (Cumberland Valley Township, Bedford Co.) (Also furnishes supply for Cumberland, Md.)							1				1
208 Exeter, Luzerne Co. (Spring Brook Water Supply Co.)													
209 Exeter Township, Berks Co. (Mt. Penn Suburban Water Co.)													
		105 Extension Water Co. of Penbrook (Supply from Hummelstown Consolidated Water Co.) (Dauphin Co.)				1							1
210 Fairchance, Fayette Co. (Supply from Trotter Water Co.)	45				1								1
211 Fairfield Township, Westmoreland Co. (Westmoreland-Connellsville Coal and Coke Co.)													
Fair Oaks (P. O.), Leet Township, Allegheny Co. (Edgeworth Water Co.)													
212 Fairview Township, York Co. (Riverton Consolidated Water Co.)													
		106 Fairview Water Co. (Athens, Bradford Co.)		1									1
		107 Fair View Water Co. (Mount Pocono (P. O.), Coolbaugh Township, Monroe Co.)										1	1
			19 Fall Brook Coal Co. (Duncan Township, Tioga Co.)								1		1

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915—Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Classification of Water Works.		Permits and Decrees.									
	Municipal.	Water Company.	Miscellaneous.	1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
213 Fallowfield Township, Washington Co. (Charleroi Water Co. consolidated 1912 and now part of Tri-Cities Water Co.)													
214 Falls Creek, Clearfield Co.,	43						1			1			2
215 Fallston, Beaver Co.,		108 Fallston Water Co. (Supply from Beaver Valley Water Co.)										1	1
216 Falls Township, Wyoming Co. (Mill City Water Co.)													
217 Farrell (formerly South Sharon), Mercer Co. (Sharon Water Works Co.													
Farwell Village, Chapman Township, Clinton Co. (Hammersley Water Co.) (Absalom Farwell).													
			20 Farwell, Absalom (Chapman Township, Clinton Co.)	1									1
Fayetteville (P. O.), Green Township, Franklin Co.		109 Fayetteville Water Co.,										1	1
218 Fell Township, Lackawanna Co. (Consolidated Water Supply Co.)													
			21 Fenstermacher, Albert R. (bottled water in Harrisburg and vicinity).									1	1

219 Ferguson Township, Centre Co. (University Water Co.)											
220 Ferndale, Cambria Co. (Johnstown Water Co.)											
Fern Glen (P. O.), Black Creek Township, Luzerne Co. (Wyoming Valley Water Supply Co., Hazleton Dept.)											
			22 Field, E. Dale (Smithfield, Fayette Co.)						1		1
221 Feetwood, Berks Co.,	47								1	1	2
Fleming (P. O. for Unionville), Centre Co.											
		110 Florin Water Co. (Mt. Joy Township, Lancaster Co.) (Also supplies through a subsidiary company to which a permit has been issued E. Donegal Township, Lancaster Co.)					1				1
222 Forest City (borough), Susquehanna Co. (Consolidated Water Supply Co.											
223 Forty Fort, Luzerne Co. (Spring Brook Water Supply Co.)											
224 Fountain Hill, Lehigh Co. (Bethlehem City Water Co.)											
Foxburg, Town of, (Richland Township) Clarion Co.		111 Foxburg Water Works Co.,			1						1
225 Frackville, Schuylkill Co. (Anthracite Water Co.)											
226 Franconia Township, Montgomery Co. (Reliance Water Co.)*											
227 Franklin (city), Venango Co. (Permits* to Venango Water Co.—plant purchased by city).	48			*3			3		1		7

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915—Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Classification of Water Works.		Permits and Decrees.									
	Municipal.	Water Company.	Miscellaneous.	1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
228 Franklin, Cambria Co. (Conemaugh and Franklin Water Co.)	----												
229 Franklin Township, Fayette Co. (Dickerson Run Water Co.)	----												
230 Franklin Township, Greene Co. (Waynesburg Water Co.)	----												
231 Freedom, Beaver Co.,	----	112 Freedom Water Co. (Supply from Beaver Valley Water Co.)										1	1
232 Freeport, Armstrong Co.,	----	113 Freeport Water Works Co.,		1									1
233 Galeton, Potter Co.,	----	114 Galeton-Eldred Water Co. (System for Galeton, Potter Co.)					1		2		1		4
		115 Galeton-Eldred Water Co. (System for Eldred, McKean Co.)									1		1
234 Gallitzin, Cambria Co.,	49											1	1
235 Garrett, Somerset Co.,	----	116 Garrett Water Co. (Also supplies Summit Township, Somerset Co.)								1			1
236 Gaysport, Blair Co.,	50											1	1
Geiger Mills (P. O.), Robeson and Union Townships, Berks Co. (Geigerstown Water Co., unincorporated).	----												

		23 Geigertown Water Co., uninc. (Geiger Mills P. O., Robeson and Union Townships, Berks Co.								1		1
		117 General Water Co. (Redston Township, Fayette Co.)									2	2
237 Genesee Township, Potter Co.,		118 Genesee Citizens Water Co.,						1				1
238 Georges Township, Fayette Co. (Trotter Water Co.)												
239 German Township, Fayette Co. (Trotter Water Co.)												
240 Gettysburg, Adams Co.,		119 Gettysburg Water Co.,						3				3
241 Gilberton, Schuylkill Co. (see also Anthracite Water Co.		120 Gilberton-Schuylkill Water Co. (Supply from Bright Run Water Co.)				1						1
242 Girardville, Schuylkill Co. (see also Girard Water Co.)		121 Girardville Water Co. (Supply from Bright Run Water Co.)				1						1
		122 Girard Water Co. (supplies Butler and West Mahanoy Townships, Girardville and Shenandoah boroughs, Schuylkill Co. (and through a subsidiary company to which a permit has been issued, Ringtown, Schuylkill Co.)							2	2		4
		123 Gladehurst Water Co. (Somerset Township, Somerset Co.)		1								1
243 Glasgow, Beaver Co.,	51									1		1
244 Glassport, Allegheny Co. (Monongahela Valley Water Co.)												
		124 Glen Brook Water Co. (Conyngham Township, Luzerne Co.)	1									1
245 Glenfield Township, Allegheny Co. (Haysville Water Co.)												

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915—Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Classification of Water Works.			Permits and Decrees.									
	Municipal.	Water Company.	Miscellaneous.	1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
			24 Glen Mills Schools, Girls' Dept. (Middletown Township, Delaware Co.)						1				1
246 Glenolden, Delaware Co. (Springfield Water Co.)													
247 Glen Rock, York Co.,	52						1	1					2
248 Gordon, Schuylkill Co. (Citizens Water Co. of Gordon).													
Gowen (P. O.) Black Creek Township, Luzerne Co. (Hazleton Dept. Wyoming Valley Water Supply Co.)													
249 Granville Township, Mifflin Co. (Lewistown and Reedsville Water Co.)													
250 Gratz, Dauphin Co.,		125 Gratz Water Co.,										1	1
		126 Gravel Hill Water Supply Co. (Supply from Lebanon Valley Consolidated Water Supply Co.) (North Londonderry Township, Lebanon Co.)					1						1
		127 Gravity Water Co. (Addison Township, Somerset Co.)									1		1
Gray Village, Jenner Township, Somerset Co. (Consolidation Coal Co.)													

251 Great Bend, Susquehanna Co. (Hallstead Water Co.)													
252 Green Township, Franklin Co. (Fayetteville Water Co.)													
253 Greencastle, Franklin Co.,	53						1	1			1		3
		128 Green Hill Water Co. (Logan Township, Blair Co.)							1				1
254 Greensburg (part), Westmoreland Co. (Westmoreland Water Co.)													
255 Greentree, Allegheny Co. (South Pittsburgh Water Co.)													
256 Greenville, Mercer Co.,		129 Greenville Water Co.,								1			1
257 Grove City, Mercer Co.,	54										1		1
258 Halifax, Dauphin Co.,		130 Halifax Water Co.,							1	1		2	4
259 Hellam, York Co. (Hellam Water Co.)													
260 Hallstead, Susquehanna Co.,		131 Hallstead Water Co. (also supplies Great Bend, Susquehanna Co.)					1						1
			25 Hall, W. C. (Chinchilla (P. O.) South Abington Township, Lackawanna Co.)							1	1		2
261 Hamburg, Berks Co. (Windsor Water Co.)													
262 Hamilton Township, McKean Co. (J. G. Curtis Leather Co.)													
263 Hamilton Township, Monroe Co. (see also Blue Mountain Consolidated Water Co.)		132 Hamilton Water Co.,		1									1
264 Hamlin Township, McKean Co. (Hazelhurst Water Co.)													

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915—Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Municipal.	Classification of Water Works.		Permits and Decrees.									
		Water Company.	Miscellaneous.	1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
		133 Hammersley Water Co. (Farrell Village, Chapman Township, Clinton Co.)										1	1
265 Hampton Township, Allegheny Co. (Allison Park Water Co.) (John F. Wyland).													
266 Hanover, York Co.,		134 Hanover & McSherrystown Water Co. (also supplies McSherrystown Borough and Conewago Township, Adams Co. and Penn Township, York Co.)				1						1	2
267 Hanover Township, Lehigh Co. (Bethlehem City Water Co.)													
268 Hanover Township, Luzerne Co. (Spring Brook Water Supply Co.)													
			26 Harbison-Walker Refractories Co. (Retort village, Rush Township, Centre Co.)									1	1
269 Harbor Creek Township, Erie Co. (W. S. Pole).													
270 Harmar Township, Allegheny Co. (Tarentum Water Co.)													
271 Harris Township, Centre Co. (Boalsburg Water Co.) (State College, Centre Co.)													

272 Harrisburg (city), Dauphin Co. (Permit* to East Mere Water Co. plant purchased by city in 1910) (Fenstermacher, Albert, bottled water).	55					*1	1							2
273 Harrison Township, Allegheny Co. (Natrona Water Co.) (Tarentum Water Co.)														
Harwood Village, Hazle Township, Luzerne Co. (Wyoming Valley Water Supply Co., Hezleton Dept.)													1	1
274 Hatboro, Montgomery Co.,		135 Hatboro Water Co.,											1	1
275 Hatfield, Montgomery Co.,	56												1	1
276 Haverford Township, Delaware Co. (Springfield Water Co.)														
277 Hawley, Wayne Co.,		136 Hawley Water Co.,											1	1
278 Hays, Allegheny Co. (South Pittsburgh Water Co.)														
279 Haysville, Allegheny Co.,		137 Haysville Water Co. (also supplies in Aleppo Township and Glenfield and Osborne, Allegheny Co.)					1		1				1	3
Hazelhurst (P. O.), Hamlin Township, McKean Co.		138 Hazelhurst Water Co.,										1		1
280 Hazleton (city), Luzerne Co. (see also Diamond Water Co. of Hazleton).		139 Hazleton Water Co. Now Hazleton Dept., Wyoming Valley Water Supply Co. Received permit* in 1909 (also supplies Beaver Meadow Borough, Carbon Co., Jennsville (P. O.), Hazle Township, Luzerne Co.)				*								*
281 Hazle Township, Luzerne Co. (see also Hazleton Water Co., Milnesville Water Co. and Wyoming Valley Water Supply Co.)		140 Hazle Township Water Co.,						1						1
282 Hegins Township, Schuylkill Co.,		141 Hegins Water Co.,								1		1		2
283 Heidelberg, Allegheny Co. (S. Pittsburgh Water Co.)														

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915—Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Classification of Water Works.			Permits and Decrees.									
	Municipal.	Water Company.	Miscellaneous.	1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
284 Heidelberg Township, Berks Co. (State Asylum for Chronic Insane of Pennsylvania, Wernersville, P. O.) (Womelsdorf Consolidated Water Co.)	----	----	----	----	----	----	----	----	----	----	----	----	----
285 Heidelberg Township, Lebanon Co.,	----	----	27 Heidelberg Water Co. (unincorporated) (of Schaefferstown village.)	----	----	1	----	----	----	----	----	----	1
Heilwood (P. O.), Pine Township, Indiana Co. (Pine Township Water Co.)	----	----	----	----	----	----	----	----	----	----	----	----	----
286 Hellam Township, York Co. (see also York Water Co.)	----	142 Hellam Water Co. (also supplies Hellam, York Co.)	----	----	----	----	1	----	----	----	----	----	1
287 Hellertown, Northampton Co.,	57	----	----	----	----	----	----	----	----	----	----	1	1
288 Hempfield Township, Westmoreland Co. (Westmoreland Water Co. of Hempfield Township).	----	----	----	----	----	----	----	----	----	----	----	----	----
Hershey Village, Derry Township, Dauphin Co.	----	143 Hershey Water Co. (First permit issued to M. S. Hershey).	----	----	1	----	----	----	----	1	----	----	2
289 Hickory Township, Mercer Co. (Sharon Water Works Co.)	----	----	----	----	----	----	----	----	----	----	----	----	----
Highland Park Village, Derry Township, Mifflin Co. (Lewistown and Reedsville Water Co.)	----	----	----	----	----	----	----	----	----	----	----	----	----

290 Highland Township, Elk Co. (Crystal Springs Park Water Co.)															
		144 Hillside Water Supply Co. (Upper Turkeyfoot Township, Somerset Co.), Markleton P. O.										1		1	
291 Hilltown Township, Bucks Co.,		145 Hilltown Water Co.,								1				1	
			Himrod, Chas., proprietor of Waterford Water Co., unincorporated q. v.												
			28 Hock, Coombe & Brumm (Norwegian Township, Village of Marlin, Schuylkill Co. Supply from Minersville Water Co.)								2			2	
		146 Holmesburg and Disston Water Companies (Supply in Philadelphia and Bensalem Township, Bucks Co.)											1	1	
		147 Home Water Co. (Montgomery Co.) (Royersford, Montgomery Co. and Spring City, Chester Co.)											1	1	
292 Homestead, Allegheny Co.,	58									1	1			2	
			Homeopathic State Hospital for the Insane (Rittersville Village, Hanover Township, Lehigh Co.) (Supply from Bethlehem City Water Co.)												
293 Honesdale, Wayne Co.,		148 Honesdale Consolidated Water Co. (Supplies also in Texas Township, Wayne Co.)						1					1	2	
294 Hooversville, Somerset Co.,		149 Hooversville Water Co.,								2				2	

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915—Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Municipal.	Classification of Water Works.		Permits and Decrees.									
		Water Company.	Miscellaneous.	1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
295 Hopbottom, Susquehanna Co.,	----	150 Hopbottom Water Co.,								1			1
			29 Horner, H. M. (Summerdale Village, East Pennsboro Township, Cumberland Co.)			1					1		2
296 Houtzdale, Clearfield Co.,	----	151 Houtzdale Water Co. (Same source used by W. Houtzdale Water Co. and Ramey Water Co.)			1								1
297 Hughestown, Luzerne Co. (Spring Brook Water Supply Co.)	----												
298 Hummelstown, Dauphin Co.,	----	152 Hummelstown Consolidated Water Co. (Also supplies through allied companies which have received permits Penbrook borough and Susquehanna and Swatara Townships, Dauphin Co.)		1	1	1							3
299 Huntingdon, Huntingdon Co. (see Penna., Ind. Ref.)	----	153 Huntingdon Water Supply Co.,				2					1		3
Hyde Park Village, Muhlenberg Township, Berks Co. (Reading Suburban Water Co.)	----												
300 Hyndman, Bedford Co.,	----	154 Hyndman Water Co.,						1	1				2
301 Indiana, Indiana Co. (Clymer Water Co. of Indiana).	----												

302 Ingram, Allegheny Co. (South Pittsburgh Water Co.)	----												
303 Irwin, Westmoreland Co. (Westmoreland Water Co.)	----												
Iselin (P. O.), Young Township, Indiana Co. (Rochester and Pittsburgh Coal and Iron Co.)	----												
		155 Jacks Mountain Water Co. (Mapleton, Huntingdon Co.)		1									1
304 Jackson Township, Cambria Co. (Nanty-Glo Water Co., unine.)	----												
305 Jackson Township, Lebanon Co. (Myerstown Water Co.)	----												
James City (P. O.), Highland Township, Elk Co. (Crystal Springs Park Water Co.)	----												
306 Jamestown, Mercer Co.,	----	156 Jamestown Water Co.,									2	1	3
307 Jeannette, Westmoreland Co. (Westmoreland Water Co.)	----												
Jeansville, Hazle Township, Luzerne Co. (Hazleton Water Co.)	----												
308 Jefferson Township, Allegheny Co. (South Pittsburgh Water Co.) (Monongahela Valley Water Co.)	----												
309 Jenkins Township, Luzerne Co. (Spring Brook Water Supply Co.)	----												
310 Jenkintown, Montgomery Co.,	----	157 Jenkintown Water Co.,						1					1
311 Jenner Township, Somerset Co. (Consolidation Coal Co.)	----												
312 Jersey Shore, Lycoming Co.,	----	158 Jersey Shore Water Co. (Same source used by Salladasburg Water Co. and Nippenose Water Co.)							2		1	1	4
313 Johnsonburg, Elk Co. (see also W. E. Zierdon).	----	159 Johnsonburg Water Co. (Also supplies Rolfe Village, Ridgway Township, Elk Co.)									1	1	2

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915—Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Municipal.	Classification of Water Works.		Permits and Decrees.									
		Water Company.	Miscellaneous.	1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
314 Johnstown (city), Cambria Co. see also: (Jerry Alwine) and (Morrelleville and Cambria Borough Water Co.)	----	160 Johnstown Water Co. (Emergency supply from Manufacturers Water Co.) (also supplies Dale, Ferndale and Westmont Boroughs and Stony Creek Township, Cambria Co.)			1							2	3
			30 Jones and Laughlin Steel Co. (Woodlawn, Beaver Co.)		1								1
		161 Josephine Water Co. (Burrell Township, Indiana Co.)				1							1
315 Juniata, Blair Co.,	59						1	1				1	3
316 Kane, McKean Co. (Spring Water Co. of Kane).	----												
317 Keating Township, McKean Co. (Smethport Water Co.)	----												
318 Kennett Square, Chester Co.,	60										1		1
		162 Kensington Water Co. (Supplies Arnold, New Kensington and Parnassus, Westmoreland Co.)							1				1
319 Kingston, Luzerne Co. (Spring Brook Water Supply Co.)	----												
320 Kingston Township, Luzerne Co. (Shaver Brothers Water Works) (Spring Brook Water Supply Co.)	----												

321 Kittanning, Armstrong Co. (Citizens Water Co. of Kittanning).														
322 Knoxville, Allegheny Co. (South Pittsburgh Water Co.)														
323 Knoxville, Tioga Co.,	61						1							1
324 Koppel, Beaver Co.,		163 Koppel Water Co.,							1					1
325 Kulpmont, Northumberland Co. (see also Bear Gap Water Co.)		164 Kulpmont Water Co.,							1					1
326 Laceyville, Wyoming Co.,	62											2		2
327 Lackawanna Township, Lackawanna Co. (Spring Brook Water Supply Co.)														
328 Laflin, Luzerne Co. (Spring Brook Water Supply Co.)														
329 Lancaster (city), Lancaster Co. (owns municipal distribution system; also supplies Manheim Township Water Co.) (See also Lancaster Water Filtration Co. which filters supply).									1					1
		165 Lancaster Water Filtration Co.,								1				1
330 Lanesboro, Susquehanna Co. (Canawacta Water Supply Co.)														
331 Langhorne, Bucks Co.,		166 Langhorne Spring Water Co. (also supplies Langhorne Manor and South Langhorne).										1	2	3
332 Langhorne Manor (Langhorne Spring Water Co.)														
333 Lansdale, Montgomery Co.,		167 Lansdale Water Co.,							1	1				2
334 Lansdowne, Delaware Co. (Springfield Water Co.)														
Lansdowne Park Village, South Abington Township, Lackawanna Co.		168 Lansdowne Park Water Co.,										1		1

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915—Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Classification of Water Works.			Permits and Decrees.									
	Municipal.	Water Company.	Miscellaneous.	1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
335 Lansford, Carbon Co. (Panther Valley Water Co.)													
336 Laporte, Sullivan Co. (Mokoma Spring Water Co.)													
337 Larksville, Luzerne Co. (Spring Brook Water Supply Co.)													
338 Latrobe, Westmoreland Co.,		169 Latrobe Water Co.,					1		1				2
339 Laurel Run, Luzerne Co. (Spring Brook Water Supply Co.)													
340 Lebanon (city) Lebanon Co.,	64			2		1	1			1	1		6
		170 Lebanon Valley Consolidated Water Supply Co. (North and South Lebanon Townships, Lebanon Co.) Supplies also through subsidiary companies which have received permits N. Londonderry, N. and S. Annville and N. Cornwall Townships, Lebanon Co.)				1	2						3
341 Leechburg, Armstrong Co. (Apollo Water Works Co.)													
342 Leet Township, Allegheny Co. (Edgeworth Water Co.)													
343 Leetsdale, Allegheny Co. (Edgeworth Water Co.)													

		171 Lehigh Water Co. (Easton, Northampton Co.)						1		1			1	3
			31 Leiby, E. B. (East Pennsboro Township, Cumberland Co.)										1	1
344 Lemoyne, Cumberland Co. (Riverton Consolidated Water Co.)														
		172 Lenni Heights Water Co. (Middletown Township, Delaware Co.)								1				1
Lenkerville Village, Upper Paxton Township, Dauphin Co. (Berry Springs Water Co.)														
345 Lewistown, Mifflin Co. (Lewistown and Reedsville Water Co.)		173 Lewistown and Reedsville Water Co. (Supplies Lewistown and Burnham Boroughs, Armagh, Brown, Derry and Greenville Townships, Mifflin Co.)											1	1
Lewistown Junction Village, Grandville Township, Mifflin Co. (Lewistown and Reedsville Water Co.														
346 Ligonier, Westmoreland Co.,	65								1				1	2
347 Lilly, Cambria Co. (Summit Water Supply Co.)														
348 Lincoln Township, Allegheny Co. (Monongahela Valley Water Co.)														
349 Linesville, Crawford Co. (Bundy Water Co.)														
350 Littlestown, Adams Co.,	63												1	1
351 Lock Haven (city), Clinton Co.,	67								1					1
352 Logan Township, Blair Co. (Allegheny Water Co.) (Green Hill Water Co.) (Roselawn Water Co.)														
		174 Londonderry Water Co.,					1							1

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915—Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Classification of Water Works.		Permits and Decrees.									
	Municipal.	Water Company.	Miscellaneous.	1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
353 Lower Allen Township, Cumberla Co. (Riverton Consolidated Wa Co.)													
354 Lower Alsace Township, Berks Co. (Mt. Penn Suburban Water Co.)													
355 Lower Chichester Township, Delaware Co. (New Chester Water Co.)													
356 Lower Gwynedd Township,		175 Lower Gwynedd Water Co. (Supply from North Wales Water Co.)							1				1
357 Lower Heidelberg Township, Berks Co. (State Asylum for Chronic Insane of Penna.)													
358 Lower Mahanoy Township, Northumberland Co. (Dalmatia Water Co.)													
359 Lower Merion Township, Montgomery Co. (Springfield Water Co.)													
360 Lower Nazareth Township, Northampton Co. (Blue Mountain Consolidated Water Co.)													
361 Lower Saint Clair Township (South Pittsburgh Water Co.)													
362 Lower Saucon Township, Northampton Co. (Bethlehem City Water Co.)													

363 Lower Towamensing Township, Carbon Co. (Palmer Water Co.)												
364 Lower Tyrone Township, Fayette Co. (Trotter Water Co.)												
Ludlow (P. O.), Hamilton Township, McKean Co. (J. G. Curtis Leather Co.)												
365 Luzerne, Luzerne Co. (Spring Brook Water Supply Co.)			32 Luzerne Co. Central Poor District Hospital for Insane and Almshouse (at Retreat, Newport Township).		1	1						2
366 Luzerne Township, Fayette Co. Brownsville Water Co.) (General Water Co.)												
367 Lykens, Dauphin Co.,		176 Lykens Water Co. (also supplies Wiconisco Township, Dauphin Co.)						1				1
368 McConnellsburg, Fulton Co.,		177 McConnellsburg Water Co.,								1	1	2
369 McDonald, Washington Co. (Citizens Water Co. of McDonald, Pa.)												
370 McKeesport (city), Allegheny Co. See also: (Monongahela Valley Water Co.)	68			1	1							2
371 McKees Rocks, Allegheny Co. (Ohio Valley Water Co.)												
McKinley (P. O.), Abington Township, Montgomery Co. (East Ogontz Water Co., unincorporated).												
372 McSherrystown, Adams Co. (Hanover and McSherrystown Water Co.)												
373 Macungie, Lehigh Co.,	69					1						1
Madera (P. O.), Bigler Township, Clearfield Co.		178 Madera Water Co. (Auxiliary supply from Ramey Water Co.)			1						1	2

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915—Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Municipal.	Classification of Water Works.		Permits and Decrees.										
		Water Company.	Miscellaneous.	1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
374 Mahanoy City (borough),		179 Mahanoy City Water Co. (Received permits* in 1910, 1911 and 1913) (Now in Hazleton Dept. Wyoming Valley Water Supply Co.) (Mahanoy, Delano and East Union Townships, Schuylkill Co.)					*	*		*			*
375 Mahanoy Township, Schuylkill Co. (Anthracite Water Co.) (Mahanoy City Water Co., now in Hazleton Dept. Wyoming Valley Water Supply Co.)													
376 Mahanoy Township, Montour Co. (State Hospital for the Insane near Danville).													
377 Malvern, Chester Co.,	70											1	1
Mammoth (P. O.), Mt. Pleasant Township, Westmoreland Co. (Sewickley Water Co.)													
378 Manchester Township, York Co. (York Water Co.)													
379 Manheim Township, Lancaster Co.,		180 Manheim Township Water Co. (supplied by Lancaster, Lancaster Co.)							1				1
380 Manor, Westmoreland Co. (Westmoreland Water Co.)													
381 Mansfield, Tioga Co.,		181 Mansfield Water Co.,									2		2

382 Mapleton, Huntingdon Co. (Jacks Mountain Water Co.)	----												
383 Marcus Hook, Delaware Co. (Chichester Water Co.) (Supply from New Chester Water Co.)	----												
384 Marianna, Washington Co.,	----	182 Marianna Water Co. (West Bethlehem Township, Washington Co.)			1	----	1	2	----	----	----	4	
		183 Marie Water Co. (Black Lick Township, Cambria Co.)			1	----	----	----	----	----	----	1	
385 Marietta, Lancaster Co.,	----	184 Marietta Gravity Water Co.,			----	1	----	----	----	----	----	1	
386 Marion Center, Indiana Co. (J. H. Rochester of Marion Center Water Co., uninc.)	----												
387 Marion Heights, Northumberland Co. (Bear Gap Water Co.)	----												
Markleton (P. O.), Upper Turkeyfoot Township, Somerset Co. (Hillside Water Supply Co.)	----												
Mar-Lin Village, Norwegian Township, Schuylkill Co. (see also Hock, Coombe and Brumm).	----	185 Mar-Lin Water Co.,			----	----	----	----	1	----	----	1	
388 Marple Township, Delaware Co. (Springfield Water Co.)	----												
389 Mars, Butler Co.,	71				1	----	----	----	----	1	----	2	
		186 Martindale Water Co. (Permit in* 1909. Purchased in 1914 by Portage Water Co. q. v.)			*	----	----	----	----	----	----	*	
390 Marysville, Perry Co.,	----	187 Marysville Water Co.,			----	----	----	2	----	1	----	3	
391 Masontown, Fayette Co.,	72				----	1	1	----	----	----	----	2	
392 Matamoras, Pike Co. (incorporated 1905).	----	188 Matamoras Citizens Water Co. (inc. June 17, 1903, for Westfall Township, Pike Co.)		1	----	----	----	----	----	----	----	1	

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915—Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Classification of Water Works.			Permits and Decrees.									
	Municipal.	Water Company.	Miscellaneous.	1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
393 Mauch Chunk, Carbon Co. (See also Upper Mauch Chunk Water Co.)	----	189 Mauch Chunk Water Co. (Also supplies East Mauch Chunk, Carbon Co.)							1	1	----	1	3
394 Mauch Chunk Township, Carbon Co. (Panther Valley Water Co.)	----												
		190 Mauch Chunk Township Water Co. (Permit* 1906, sold to Panther Valley Water Co. in 1907, which see).		*									*
395 Mechanicsburg, Cumberland Co.,	----	191 Mechanicsburg Gas and Water Co.,		1	1								2
396 Media, Delaware Co. (also supplies Nether Providence Township, Delaware Co.)	73										2	1	3
397 Menallen Township, Adams Co. (Aspers Water Co.)	----												
398 Mercer, Mercer Co.,	----	192 Mercer Water Co.,										1	1
399 Mercersburg, Franklin Co.,	----	193 Mercersburg Water Co.,								1			1
400 Meyersdale, Somerset Co. (Sand Spring Water Co. of Meyersdale).	----												
401 Middleburg, Snyder Co.,	----	194 Middleburg Water Co.,									1		1
402 Middle Paxton Township, Dauphin Co. (Dauphin Consolidated Water Supply Co.)	----												
403 Middleport, Schuylkill Co.,	----	195 Middleport Water Co. (Supply from Silver Creek Water Co.)							1				1

404 Middle Smithfield Township, Monroe Co. (D. D. Drake).												
405 Middletown, Dauphin Co.,		196 Middletown and Swatara Consolidated Water Co. (Also supplies Royalton, Dauphin Co.)			1							1
406 Middletown Township, Delaware Co. (Glen Mills Schools, Girls' Department) (Lenni Heights Water Co.)												
407 Midland, Beaver Co.,		197 Midland Water Co.,							1			1
408 Mifflin Township, Allegheny Co. (S. Pittsburgh Water Co.)												
409 Mifflinburg, Union Co.,	74										1	1
410 Milford Township, Juniata Co. (Port Royal Water Supply Co.)												
Mill City (P. O.), Falls Township, Wyoming Co.)		198 Mill City Water Co.,									1	1
411 Millcreek Township, Lebanon Co. See also: (Newmanstown Water Co.) (Womelsdorf Consolidated Water Co.)		199 Millcreek Water Co. (Supply from Womelsdorf Consolidated Water Co.) (Sheridan P. O.)								1		1
			33 Miller, F. C. (for Pocono Pines, Tobyhanna Township, Monroe Co.)					1				1
412 Millersburg, Dauphin Co.,		200 Millersburg Home Water Co.,			1							1
413 Millerstown, Perry Co.,	75									2		2
414 Millheim, Centre Co.,		201 Millheim Water Co.,								1		1
Milnesville Village, Hazle Township, Luzerne Co.		202 Milnesville Water Co. Received permit* in 1907. (Now in Hazleton Dept. Wyoming Valley Water Supply Co., q. v.)			*							*
Milroy (P. O.), Armagh Township, Mifflin Co. (Lewistown and Reedsville Water Co.)												

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915—Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Municipal.	Classification of Water Works.		Permits and Decrees.									
		Water Company.	Miscellaneous.	1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
415 Miners Mills, Luzerne Co. (Spring Brook Water Supply Co.)	----												
416 Minersville, Schuylkill Co.,	----	203 Minersville Water Co. (also supplies Cass and New Castle Townships and through a subsidiary company Norwegian Township, Schuylkill Co.)			1								1
417 Mohnton, Berks Co. (Mohnsville Water Co.)	----	204 Mohnsville Water Co. (Mohnton and Shillington, Berks Co.)									2	1	3
		205 Mokoma Spring Water Co. (Laporte, Sullivan Co.)					1						1
418 Monessen, Westmoreland Co.,	----	206 Monessen Water Co. (Bought Charleroi and Donora Water Companies Aug. 15, 1912. Now Tri-Cities Water Co.)					1		1				2
419 Monongahela (city), Washington Co.,	----	207 Monongahela City Water Co.,										1	1
		208 Monongahela Valley Water Co. (McKeesport City (part), and boroughs of Clairton, Dravosburg, Elizabeth, Glassport, West Elizabeth and Wilson, and townships of Jefferson and Lincoln, Allegheny Co.) (Also supplies through a subsidiary company to which a permit has been issued. Port Vue, Allegheny Co.)									1		1
420 Monroe, Bradford Co. (Towanda Water Works Co.)	----												

421 Monroe Township, Snyder Co. (J. Calvin Boyer).												
422 Mont Alto, Franklin Co.,	76									1		1
423 Montgomery, Lycoming Co.,		209 Montgomery Water Co.,				1						1
424 Montgomery Township, Montgomery Co. (North Wales Water Co.)												
		210 Moore Water Co. (Supply from Suburban Water Co. of Allegheny Co.) (Plum Township, Allegheny Co.)			1							1
425 Moosic, Lackawanna Co. (Spring Brook Water Supply Co.)												
426 Moreland Township, Montgomery Co. (See also Springfield Consolidated Water Co.)		211 Moreland Spring Water Co. (Supplies also through subsidiary companies which have received permits, Abington and Cheltenham Townships, Montgomery Co.)			2		1	1				4
Morgantown (P. O.), Caernarvon Township, Berks Co.		212 Morgantown Water Co.,									1	1
Morganza, Cecil Township, Washington Co. (See Penna. Training School).												
		213 Morrellville and Cambria Borough Water Co. (Johnstown, Cambria Co.)			1		1					2
427 Morrisville, Bucks Co.,	77										1	1
		214 Moss Glen Water Co. (Supply from Silver Creek Water Co.) (Schuylkill Township, Schuylkill Co.)					1					1
		215 Mountain Water Co. (Upper Milford Township, Lehigh Co. and Emmaus, extension of Lehigh Co.)				1						1
428 Mount Carmel, Northumberland Co. (Bear Gap Water Co.)												

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915—Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Municipal.	Classification of Water Works.		Permits and Decrees.									
		Water Company.	Miscellaneous.	1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
429 Mount Carmel Township, Northumberland Co. (Kulpmont Water Co.) (Bear Gap Water Co.)													
Mount Gretna (P. O.), South Londonderry Township, Lebanon Co. (Camp Grounds National Guard, Mt. Gretna) (Adjutant General's Dept.) (Pennsylvania Chautauqua Association).													
430 Mount Jewett, McKean Co.,		216 Mount Jewett Water Co.,										1	1
431 Mount Joy Township, Lancaster Co. (Florin Water Co.)													
432 Mount Oliver, Allegheny Co. (South Pittsburgh Water Co.)													
433 Mount Penn, Berks Co.,		217 Mount Penn Suburban Water Co. (also supplies Exeter and Lower Alsace Townships, Berks Co.)							1			2	3
434 Mount Pleasant Township, Washington Co. (Citizens Water Co. of Mt. Pleasant Township) (Supply from Citizens Water Co. of McDonald).													
435 Mount Pleasant Township, Westmoreland Co. (Sewickley Water Co.)													
Mount Pocono (P. O.), Coolbaugh Township, Monroe Co. (Fairview Water Co.)													

436 Mount Union, Huntingdon Co.,		218 Mount Union Water Co. (also supplies Shirley Township, Huntingdon Co.)					1				1			1	3	
437 Mountville, Lancaster Co.,	78						1				1				2	
438 Muhlenberg Township, Berks Co. (Reading Suburban Water Co.)																
439 Muncy, Lycoming Co.,		219 Muncy Water Supply Co.,								1			2		3	
440 Myerstown, Lebanon Co.,		220 Myerstown Water Co.,						1	1						2	
Naginey (P. O.), Armage Township, Mifflin Co. (Lewistown and Reedsville Water Co.)																
441 Nanticoke, Luzerne Co. (Spring Brook Water Supply Co.)																
Nanty-Glo (Blacklick and Jackson Townships, Cambria Co.)			34 Nanty-Glo Water Co. (unincorporated).				1							1	2	
442 Narberth, Montgomery Co. (Springfield Water Co.)																
Natrona (P. O.), Harrison Township, Allegheny Co.		221 Natrona Water Co. (Harrison Township, Allegheny Co.)					1							2	3	
443 Nazareth, Northampton Co. (Blue Mountain Consolidated Water Co.)																
444 Nescopeck, Luzerne Co.,		222 Nescopeck Water Supply Co.,						1							1	
445 Nether Providence, Delaware Co. (Media Municipal supply through Nether Providence and Wallingford Water Companies).																
446 Newville Township, Allegheny Co. (Island) (Ohio Valley Water Co.)																
447 New Bethlehem, Clarion Co. (Citizens Water Co. of New Bethlehem).																
New Bloomfield (P. O.), for Bloomfield, Perry Co. (Bloomfield Water and Sewer Co.)																

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915—Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Classification of Waterworks.			Permits and Decrees.									
	Municipal.	Water Company.	Miscellaneous.	1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
448 New Brighton, Beaver Co.,	----	223 New Brighton Water Co. (supply from Beaver Valley Water Co.)										1	1
449 New Castle (city), Lawrence Co. (City of New Castle Water Co.)	----												
450 New Castle Township, Schuylkill Co. (Minersville Water Co.)													
		224 New Chester Water Co. (Supplies Chester City, Upland Borough and Lower Chichester Township, Delaware Co. and through subsidiary companies which have received permits, the boroughs of Marcus Hook and Eddystone and Chester Township, Delaware Co.)			2	1			1				4
451 New Cumberland, Cumberland Co. (Riverton Consolidated Water Co.)	----												
452 New Kensington, Westmoreland Co. (Kensington Water Co.)	----												
453 New Oxford, Adams Co.,	79								1	1			2
Newmanstown (P. O.) Mill Creek Township, Lebanon Co.	----	225 Newmanstown Water Co.,									2	1	3
454 Newport, Perry Co.,	----	226 Newport Home Water Co. (Also supplies Oliver Township, Perry Co.)				1							1
455 Newport Township, Luzerne Co. (Luzerne Co. Central Poor District) (Spring Brook Water Supply Co.)	----												

456 New Wilmington, Lawrence Co.,		227 New Wilmington Water Supply Co.,									1	1	2
457 Nicholson, Wyoming Co.,		228 Nicholson Water Co.,								2			2
458 Nippenose Township, Lycoming Co.,		229 Nippenose Water Co. (Same source as Jersey Shore Water Co.)						1					1
459 Norristown, Montgomery Co.,		230 Norristown Insurance and Water Co. (Also supplies Bridgeport Borough and Plymouth Township, Montgomery Co., and through a subsidiary company which has received a permit, W. Norriton Township, Montgomery Co.)						1			1	1	3
		231 North Abington Water Co. (Dalton, Lackawanna Co.)										1	1
460 Northampton, Northampton Co. (Clear Springs Water Co.)													
461 Northampton Co. (Bethlehem City Water Co.)													
462 North Annville Township, Lebanon Co. (See also Annville Water Co.)		232 North Annville Water Supply Co. (Supply from Lebanon Valley Consolidated Water Supply Co.)					1						1
463 North Braddock, Allegheny Co. (Penna. Water Co.)													
464 North Catasauqua, Northampton Co. (Clear Springs Water Co.)													
465 North Charleroi, Washington Co. (Charleroi Water Co. consolidated 1912 and now part of Tri-Cities Water Co.)													
466 North Cornwall Township, Lebanon Co.		233 North Cornwall Water Supply Co. (Supply from Lebanon Valley Consolidated Water Supply Co.)					1						1
467 North Coventry Township, Chester Co. (Pottstown Gas and Water Co.													

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915—Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Municipal.	Classification of Water Works. Water Company.	Miscellaneous.	Permits and Decrees. 1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
468 North East, Erie Co.,	80			1	1				1				3
		Northern Cambria Water Co. (Barnesboro Water Co. and Spangler Water Co. merged with this Co. in 1913. See former Co. for permit.) (Supplies Spangler Borough and Susquehanna Township, Cambria Co. Distributing system in Barnesboro sold to borough in 1913.)											
469 North Fayette Township, Allegheny Co. (Citizens Water Co. of North Fayette Township.) (Supply from Citizens Water Co. of McDonald.)													
470 North Huntingdon Township, Westmoreland Co. (Westmoreland Water Co.)													
471 North Irwin Township, Westmoreland Co. (Westmoreland Water Co.)													
472 North Lebanon Township, Lebanon Co. (Lebanon Valley Consolidated Water Supply Co.)													
473 North Londonderry Township, Lebanon Co. (Gravel Hill Water Supply Co. Supply from Lebanon Valley Consolidated Water Supply Co.)													
474 North Manheim Township, Schuylkill Co. (Schuylkill Co. House of Employment.)		234 North Manheim Water Co.,						1					1

475 North Moreland Township, Wyoming Co. (Center Moreland Water Co.)													
North Rochester, Rochester Township, Beaver Co.		235 North Rochester Water Co. (Supply from Beaver Valley Water Co.) (Supplies also E. Rochester, Beaver Co.)										1	1
476 North Strabane Township, Washington Co.		236 North Strabane Water Co. (Supplies Canonsburg and Cecil Township, Washington Co.)							1		3		4
477 Northumberland, Northumberland Co.,		237 Northumberland Water Co. (Also supplies Point Township, Northumberland Co.)							1				1
478 North Union Township, Fayette Co. (Trotter Water Co.)													
479 North Versailles Township, Allegheny Co. (East McKeesport Water Co.)													
480 North Wales, Montgomery Co.,		238 North Wales Water Co. (Also supplies Montgomery Township, Montgomery Co. and through subsidiary companies which have received permits Upper and Lower Gwynedd Townships, Montgomery Co.)							1				1
481 Norwegian Township, Schuylkill Co. (Hock, Coombe and Brumm) (Mar-Lin Water Co.) (Penn Land Co.)													
482 Norwich Township, McKean Co. (Crosby Gas Co.)													
483 Norwood, Delaware Co. (Springfield Water Co.)													
484 Oakdale, Allegheny Co.,	81										1		1
Oak Lane, Philadelphia (Springfield Consolidated Water Co.)													
485 Oakmont, Allegheny Co. (Suburban Water Co. of Allegheny Co., Pa.)													
		239 Ogontz Water Co. (Supply from Moreland Spring Water Co.) (Cheltenham Township, Montgomery Co.)					1						1

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915—Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Classification of Water Works.		Permits and Decrees.									
	Municipal.	Water Company.	Miscellaneous.	1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
		240 Ohio Valley Water Co. (Supplies Avalon, Bellevue, Ben Avon, Emsworth, McKees Rocks, and Westview Boroughs and Neville, Rose and Stowe Townships, Allegheny Co.)				1		1				1	3
486 Oil City (city), Venango Co.,	82											1	1
487 Old Forge, Lackawanna Co. (Spring Brook Water Supply Co.)													
488 Oliver Township, Perry Co. (Newport Home Water Co.)													
Oneida (P. O.) Village, East Union Township, Schuylkill Co. (Wyoming Valley Water Supply Co., Hazleton Dept.)													
489 Orbisonia, Huntingdon Co.,			35 Orbisonia Water Co. (Not incorporated.) (Orbisonia and Rockhill, Huntingdon Co.)		1								1
490 Osborne, Allegheny Co. (Haysville Water Co.)													
Overbrook, Philadelphia (Springfield Water Co.)													
491 Oxford, Chester Co.,	83						2						2
492 Paint, Somerset Co. (Windber Water and Power Co.)													

493 Paint Township, Somerset Co. (Windber Water and Power Co.)												
	241 Palmer Water Co. (Supplies Lower Towamensing Township and Palmerton, Carbon Co.)						3		1		4
494 Palmerton, Carbon Co. (Palmer Land Co.)												
495 Palmyra, Lebanon Co. (Londonderry Water Co.)												
	242 Panther Valley Water Co. (Supplies Lansford Borough and Mauch Chunk Township, Carbon Co. and Coaldale Borough and Rahn Township, Schuylkill Co.—also other districts in these counties. In 1907 purchased Mauch Chunk Township Water Co. that received permit* in 1906.)	*1		1	1			2		5
496 Parker, Armstrong Co.,	243 Parker City Water Co.,				1					1
497 Parkesburg, Chester Co.,	244 Parkesburg Water Co.,		1							1
498 Parnassus, Westmoreland Co. (Kensington Water Co.)												
499 Parsons, Luzerne Co. (Spring Brook Water Supply Co.)												
500 Patterson Heights, Beaver Co.,	245 Patterson Heights Water Co. (Supply from Beaver Valley Water Co.)								1	1
501 Patton Township, Allegheny Co. (Penna. Water Co.)												
502 Patton, Cambria Co.,	246 Patton Water Co.,							1		1
503 Paxtang, Dauphin Co.,	247 Paxtang Consolidated Water Co.,		1	2						3
504 Pen Argyl, Northampton Co. (Blue Mountain Consolidated Water Co.)												
505 Penbrook, Dauphin Co. (Extension Water Co. of Penbrook, Supply from Hummelstown Consolidated Water Co.)												

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915 Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Classification of Water Works.			Permits and Decrees.									
	Municipal.	Water Company.	Miscellaneous.	1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
566 Penn, Westmoreland Co. (Westmoreland Water Co.)													
Pen Mar (P. O.), Washington Township, Franklin Co. (Rouzerville Water Co.)													
			36 Penn Land Co. (Norwegian Township, Schuylkill Co.)					1	1				2
567 Pennsburg, Montgomery Co.,		248 Pennsburg Water Co. (Auxiliary supply from Red Hill Water Co.)						1				1	2
			37 Pennsylvania Chautauqua Association (S. Londonderry Township, Lebanon Co.) Mt. Gretna P. O.)								1		1
			38 Pennsylvania Industrial Reformatory (Smithfield Township, near Huntingdon, Huntingdon Co.)				1		1				2
			39 Pennsylvania Railroad Co. (Supply for Railroad Shops and a few residences in Renovo, Clinton Co.)								1		1

		40 Pennsylvania Training School (Morganza, Cecil Township, Washington Co.)	1											1
		249 Pennsylvania Water Co. (Supplies in Allegheny Co., Braddock, Patton, Penn and Wilkins Townships, and E. Pittsburgh, Edgewood, N. Braddock, Pitcairn, Rankin, Swissvale, Turtle Creek, Wilkinsburg, and Wilmerding Boroughs, and Pittsburgh—13th Ward. Also Trafford Borough in Westmoreland Co.)			1	1						2
508 Penn Township, Allegheny Co. (Penna. Water Co.) (Unity Water Co. Supply from Suburban Water Co. of Allegheny Co.)														
509 Penn Township, Westmoreland Co. (Westmoreland Water Co.)														
510 Penn Township, York Co. (Hanover and McSherrystown Water Co.)														
511 Perkasie, Bucks Co.,		250 Perkasie Water Supply Co.,			1		2			1				4
512 Perry Township, Snyder Co. (J. Calvin Boyer.)														
513 Philadelphia (city); see also: (Springfield Consolidated Water Co. for Oak Lane) (Springfield Water Co. for Overbrook) (James S. Williams for Somerton) (Holmesburg and Disston Water Companies for 23rd, 35th and 41st Wards.)	84										3	2	5	
514 Phoenixville, Chester Co. (Also supplies Schuylkill Township, Chester Co. and Upper Providence Township, Montgomery Co.)	85						2	1					3	
515 Pine Grove, Schuylkill Co.,	86										1	1	2	
516 Pine Township, Indiana Co.,		251 Pine Township Water Co.,										1	1	

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915—Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Classification of Water Works.			Permits and Decrees.									
	Municipal.	Water Company.	Miscellaneous.	1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
517 Pitcairn, Allegheny Co. (Penna. Water Co.)													
518 Pittsburgh (city), Allegheny Co. (See also Penna. Water Co. for 13th Ward and South Pittsburgh Water Co. for Sheradon (old 43rd Ward) and 38th and 42nd Wards and West Liberty District.)	87				1				1				2
			41 Pittsburgh Coal Co. (Van Meter (P. O.), Rostraver Township, Westmoreland Co.)							1			1
519 Pittston (city), Luzerne Co. (Spring Brook Water Supply Co.)													
520 Pittston Township, Luzerne Co. Spring Brook Water Supply Co.)													
521 Plainfield Township, Northampton Co. (See also Blue Mountain Consolidated Water Co.)		252 Plainfield Water Co.,								1			1
522 Plains Township, Luzerne Co. (Spring Brook Water Supply Co.)													
		253 Pleasant Gap Water Supply Co. (Spring Township, Centre Co.)						1					1
523 Pleasantville, Venango Co.,	88					1							1

524 Plum Township, Allegheny Co. (Moore Water Co. Supply from Suburban Water Co. of Allegheny Co.)													
525 Plymouth, Luzerne Co. (Spring Brook Water Supply Co.)													
526 Plymouth Township, Luzerne Co. (Spring Brook Water Supply Co.)													
527 Plymouth Township, Montgomery Co. (Norristown Insurance and Water Co.) (Springfield Consolidated Water Co.)													
Pocono Pines, Tobyhanna Township, Monroe Co. (F. C. Miller.)													
528 Point Township, Northumberland Co. (Northumberland Water Co.)													
			42 Pole, W. S. (Harbor Creek Township, Erie Co.)									1	1
529 Polk, Venango Co. (State Institution for Feeble-Minded of Western Pennsylvania.)													
		254 Pompeii Water Co. (Washington Township, Northampton Co.)							1				1
530 Portage, Cambria Co.,		255 Portage Water Co. (Purchased Martindale Water Co. which received permit* in 1909.)				*1					1	1	3
531 Portage Township, Cambria Co. (Portage Water Co.) (Bens Creek Water Co.)													
532 Port Allegany, McKean Co.,		256 Port Allegany Water Co.,						1					1
533 Portland, Northampton Co.,		257 Portland Water Co. (Also supplies Upper Mt. Bethel Township, Northampton Co.)		1			1						2
Port Matilda (P. O.) Village (Worth Township, Centre Co.)		258 Port Matilda Water Co.,				1							1

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915—Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Classification of Water Works.			Permits and Decrees.									
	Municipal.	Water Company.	Miscellaneous.	1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
534 Port Royal, Juniata Co.,		259 Port Royal Water Supply Co. (Also supplies Miliford and Turbett Townships, Juniata Co.)					1	1					2
535 Port Vue, Allegheny Co.,		260 Port Vue Water Co. (Supply from Monongahela Valley Water Co.)										1	1
536 Pottstown, Montgomery Co.,		261 Pottstown Gas and Water Co. (Also supplies North Coventry Township, Chester Co. and West Pottsgrove Township, Montgomery Co.)			1								1
537 Pringle Township, Luzerne Co. (Spring Brook Water Supply Co.)													
538 Prospect Park, Delaware Co. (Springfield Water Co.)													
539 Punxsutawney, Jefferson Co.,		262 Punxsutawney Water Co. (Also supplies Big Run, Jefferson Co.)				1							1
		243 Pure Mountain Water Co. (Black Township, Somerset Co.)									1		1
540 Quakertown, Bucks Co.,		264 Quakertown Water Co.,									1		1
541 Quarryville, Lancaster Co.,		265 Quarryville Water Co.,					2	1					3
542 Radnor Township, Delaware Co. (Springfield Consolidated Water Co.)													
543 Rahn Township, Schuylkill Co. (Panther Valley Water Co.)													

544 Ramey, Clearfield Co.,		265 Ramey Water Co. (Same source as Houtzdale Water Co.) (Also supplies Bigler Township, Clearfield Co.)			1					1	2
545 Rankin, Allegheny Co. (Pennsylvania Water Co.)											
546 Rayburn Township, Armstrong Co. (Citizens Water Co. of Kittanning.)											
547 Rayne Township, Indiana Co. (Rochester and Pittsburgh Coal and Iron Co.)											
548 Reade Township, Cambria Co. (Blandburg Water Co.)											
549 Reading (city), Berks Co.,	89				2						2
		267 Reading Suburban Water Co. (Hyde Park Village, Muhlenberg Township, Berks Co.)		1			1			1	4
			43 Rebok, George A. (Tuscarora Township, Perry Co.)					1			1
550 Red Hill, Montgomery Co.,		268 Red Hill Water Co. (Auxiliary supply from Pennsburg Water Co.)					1				1
551 Red Lion, York Co.,		269 Red Lion Water Co.,					1	1		1	3
552 Redstone Township, Fayette Co. (General Water Co.)											
553 Reilly Township, Schuylkill Co. (Blackwood Water Co. Now Blackwood Dept. Wyoming Valley Water Supply Co.)											
Reedsville (P. O.), Brown Township, Mifflin Co. (Lewistown and Reedsville Water Co.)											
		270 Reliance Water Co. (Franconia Township, Montgomery Co.)					1				1

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915—Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Municipal.	Classification of Water Works.		Permits and Decrees.									
		Water Company.	Miscellaneous.	1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
Reno (P. O.), Sugar Creek Township, Venango Co. (Venango Oil and Land Co.)	----												
554 Renovo, Clinton Co. (See also Pennsylvania Railroad Co.)	90							1				1	2
555 Reserve Township, Allegheny Co. (Supply from Pittsburgh.)	91											1	1
Retort Village, Rush Township, Centre Co. (Harbison-Walker Refractories Co.)	----												
Retreat P. O., Newport Township, Luzerne Co. (Central Poor District.)	----												
556 Reynoldsville, Jefferson Co.,	----	271 Reynoldsville Water Co. (Also supplies W. Reynoldsville Borough and Winslow Township, Jefferson Co.)							1		2	1	4
		272 Rheems Water Co. (W. Donegal Township, Lancaster Co.)						1					1
557 Richland, Lebanon Co.,	92										1		1
558 Richland Township, Cambria Co. (See also Windber Water and Power Co.)	----	273 Richland Township Water Co.,								1			1
559 Richland Township, Clarion Co. (Foxburg Water Works Co.)	----												
560 Ridgway, Elk Co.,	93			1	1	1						1	4

561 Ridgway Township, Elk Co. (Johnsonburg Water Co.)												
562 Ridley Park, Delaware Co. (Springfield Water Co.)												
563 Ridley Township, Delaware Co. (Springfield Water Co.)												
		274 Ridley Water Co. (Supply from New Chester Water Co.) (Eddystone, Delaware Co.)		1	1							2
564 Rimersburg, Clarion Co.,	94					1			1	1		3
565 Ringtown, Schuylkill Co.,		275 Ringtown Spring Water Co. (Supply from Girard Water Co.)				1		1			1	3
Rittersville Village, Hanover Township, Lehigh Co. (Homeopathic State Hospital for the Insane—supplied by Bethlehem City Water Co.)												
		276 Riverton Consolidated Water Co. (Supplies Camp Hill, Lemoyne, New Cumberland and Wormleysburg Boroughs and E. Pennsboro and Lower Allen Townships, Cumberland Co., and Fairview Township, York Co.)		3	1							4
		277 Roaring Creek Water Co. (Shamokin Borough and Coal Township, Northumberland Co.)						1				1
566 Robeson Township, Berks Co. (Geigertown Water Co., unin.)												
567 Robesonia, Berks Co. (Womelsdorf Consolidated Water Co.)												
Robindale Village, East Conemaugh Township, Cambria Co. (Conemaugh and Franklin Water Co.)												
568 Robinson Township, Allegheny Co. (South Pittsburgh Water Co.)												

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915—Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Classification of Water Works.			Permits and Decrees.									
	Municipal.	Water Company.	Miscellaneous.	1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
569 Robinson Township, Washington Co. (Citizens Water Co. of Robinson Township.)													
570 Rochester, Beaver Co. (Valley Water Co. of Rochester, supply from Beaver Valley Water Co.)													
			44 Rochester, J. H. of Marion Center Water Co., mine. (Marion Center, Indiana Co.)					1					1
571 Rochester, Beaver Co. (N. Rochester Water Co., supply from Beaver Valley Water Co.)			45 Rochester and Pittsburgh Coal and Iron Co. (Rayne Township, Indiana Co.)									1	1
572 Rockhill, Huntingdon Co. (Orbisonia Water Co.)			46 Rochester and Pittsburgh Coal and Iron Co. (Young Township, Indiana Co.)									1	1
		278 Rock Hill Water Co. (Telford, Bucks Co.)						1					1
573 Rockledge, Montgomery Co. (Springfield Consolidated Water Co.)													
Rolfe Village, Ridgway Township, Elk Co. (Johnsonburg Water Co.)													
		279 Rosslawn Water Co. (Logan Township, Blair Co.)					1	1					2

574 Rosato, Northampton Co. (Bangor Water Co.)													
575 Rose Township, Jefferson Co. (Brookville Water Co.)													
576 Ross Township, Allegheny Co. (Ohio Valley Water Co.)													
577 Ross Township, Monroe Co. (Blue Mountain Consolidated Water Co.)													
578 Rostraver Township, Westmoreland Co. (Monessen Water Co. Now Tri-Cities Water Co.) (Pittsburgh Coal Co.)													
579 Roulette Township, Potter Co.,		280 Roulet Water Co.,			1								1
580 Rouseville, Venango Co. (Stone Hill Water Co.)													
Rouzerville (P. O.), Washington Township, Franklin Co.		281 Rouzerville Water Co. (Supplies also Pen Mar (P. O), Washington Township, Franklin Co.)										1	1
581 Royalton, Dauphin Co. (Middletown and Swatara Consolidated Water Co.)													
582 Royersford, Montgomery Co. (Home Water Co. of Montgomery Co.)													
583 Rural Valley, Armstrong Co.,							1						1
584 Rush Township, Centre Co. (Harbison-Walker Refractories Co.)													
		282 Rutherford Heights Water Supply Co. (Supply from Hummelstown Consolidated Water Co.) (Swatara Township, Dauphin Co.)		2	1	1							4
585 Saegertown, Crawford Co.,	96							2				1	3
586 St. Clair, Allegheny Co. (South Pittsburgh Water Co.)													
587 St. Marys, Elk Co.,		283 St. Marys Water Co.,			1								1

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915—Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Municipal.	Classification of Water Works.		Permits and Decrees.									
		Water Company.	Miscellaneous.	1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
588 Salem Township, Luzerne Co. (West Salem Water Supply Co.)	----												
589 Salisbury Township, Lehigh Co. (Bethlehem City Water Co.)	----												
590 Salladasburg, Lycoming Co.,	----	284 Salladasburg Water Co. (Same source as Jersey Shore Water Co.)						1					1
		285 Sand Spring Water Co. of Meyersdale (Meyersdale, Somerset Co.)						1	1				2
591 Sankertown, Cambria Co. (See also Cresson Water Co.)	97										1		1
592 Sayre, Bradford Co. (Bradford County Water Co.)	----												
593 Scalp Level, Cambria Co. (Windber Water and Power Co.)	----												
Schaefferstown (P. O.), Heidelberg Township, Lebanon Co. (Heidelberg Water Co., unincorporated.)	----												
			47 Schuylkill Co. House of Employment (N. Manheim Twp.)									1	1
594 Schuylkill Haven, Schuylkill Co.,	----	286 Schuylkill Haven Gas and Water Co. (Also supplies Cressona, Schuylkill Co.)					2	1	1				4

595 Schuylkill Township, Chester Co. (Phoenixville Municipal Supply) (Springfield Consolidated Water Co.)															
596 Schuylkill Township, Schuylkill Co. (Moss Glen Water Co., supply from Silver Creek Water Co.)															
597 Scott Township, Allegheny Co. (South Pittsburgh Water Co.)															
598 Scottdale, Westmoreland Co. (Citizens Water Co. of Scottdale.)															
599 Scranton (city), Lackawanna Co. (See also Spring Brook Water Supply Co. and City Water Co. of Scranton.)		287 Scranton Gas and Water Co. (Also supplies Dickson City Borough and Throop, Lackawanna Co.)					1								1
			48 Seitz, D. S., and F. C. Sites (E. Pennsboro Township, Cumberland Co.)											1	1
600 Sellersville, Bucks Co.,	98									1					1
601 Sewickley, Allegheny Co.,	99												1		1
		288 Sewickley Water Co. (Villages of Mammoth (P. O.), Calumet (P. O.), Trauger (P. O.), and United (P. O.), in Mount Pleasant Township and village of Unity in Unity Township, Westmoreland Co.)											2		2
602 Shade Township, Somerset Co. (Cairnbrook Water Co.) (Windber Water and Power Co.)															
603 Shamokin, Northumberland Co. (Roaring Creek Water Co.)															
604 Sharon, Mercer Co.,		289 Sharon Water Works Co. (Also supplies Farrell Borough and Hickory Township, Mercer Co.)									1			1	2
605 Sharon Hill, Delaware Co. (Springfield Water Co.)															

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915—Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Classification of Water Works.			Permits and Decrees.									
	Municipal.	Water Company.	Miscellaneous.	1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
Shavertown (P. O.), Kingston Township, Luzerne Co.	----		49 Shaver Brothers Water Works.				1						1
Shawnee Village, Smithfield Township, Monroe Co.	----	290 Shawnee Water Supply Co.,				1							1
Sheffield Village, (Sheffield Township), Warren Co.	----	291 Sheffield Water Co.,			1								1
606 Shenandoah, Schuylkill Co. (Anthracite Water Co.) (Girard Water Co.)	----												
Sheridan (P. O.), Millcreek Township, Lebanon Co. (Millcreek Water Co. Supply from Womelsdorf Consolidated Water Co.)	----												
607 Shillington, Berks Co. (Mohnsville Water Co.)	----												
608 Shinglehouse, Potter Co.,	----		50 Shinglehouse Water Co. (mine.)				1						1
609 Shippensburg, Cumberland Co.,	100										1		1
610 Shippenville, Clarion Co.,	101										1		1
611 Shiremanstown, Cumberland Co.,	----	292 Shiremanstown Water Co.,			2								2
612 Shirley Township, Huntingdon Co. (Mt. Union Water Co.)	----												
613 Shrewsbury, York Co.,	102						1	1					2

		293 Silver Creek Water Co. (Part of supply from Crystal Water Co.) (Blythe Township, Schuylkill Co.) (Also supplies through allied companies which have received permits Middleport Borough and Schuylkill Township, Schuylkill Co.)							1				1
614 Sinking Spring, Berks Co.,		294 Sinking Spring Water Co. (Also supplies Wyomissing (part) and villages of Springmont, Intervilla, Wyomissing Heights and West Wyomissing in Spring Township, Berks Co.)									2	1	3
615 Sligo, Clarion Co.,	103		103						1				1
616 Slippery Rock, Butler Co.,	104				1								1
617 Smethport, McKean Co.,		295 Smethport Water Co. (Also supplies East Smethport (P. O.), Keating Township, McKean Co.)									1		1
618 Smithfield, Fayette Co. (E. Dale Field.)													
619 Smithfield Township, Huntingdon Co. (Pennsylvania Industrial Reformatory.)													
620 Smithfield Township, Monroe Co. (Shawnee Water Supply Co.)													
			51 Snably, W. A. (Benson Borough and Conemaugh Township, Somerset Co.)							1			1
621 Snowden Township, Allegheny Co. (South Pittsburgh Water Co.)													
622 Somerset, Somerset Co.,	105								1				1
			52 Somerset Co. Poor Directors (Home in Somerset Township.)		1				1				2
623 Somerset Township, Somerset Co. (Gladehurst Water Co.) (See also Somerset Co. Poor Directors.)													

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915—Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Municipal.	Classification of Water Works.		Permits and Decrees.									
		Water Company.	Miscellaneous.	1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
624 Souderton, Montgomery Co.,	103								1				1
625 South Abington Township, Lackawanna Co. (W. C. Hall, Chinchilla Village) (Lansdowne Park Water Co.)													
626 South Allentown, Lehigh Co.,	107										2		2
627 South Annville Township, Lebanon Co. (See also Annville Water Co.)		296 South Annville Water Supply Co. (Supply from Lebanon Valley Consolidated Water Supply Co.)					1						1
628 South Bethlehem, Armstrong Co. (Citizens Water Co. of New Bethlehem.)													
629 South Bethlehem, Northampton Co. (Bethlehem City Water Co.) (Bethlehem Steel Co.)													
630 South Brownsville, Fayette Co. (Brownsville Water Co.)													
		297 South Bradford Water Co. (Bradford Township, McKean Co.)			1								1
		298 South Easton Water Co. (Easton, Northampton Co.)				1		1	1				3
631 South Fayette Township, Allegheny Co. (Citizens Water Co. of S. Fayette Township.) (Supply from Citizens Water Co. of McDonald.)													
632 South Fork, Cambria Co.,		299 South Fork Water Co.,						1			1		2

633 South Greensburg, Westmoreland Co. (Westmoreland Water Co.)													
634 South Heights, Beaver Co.,	168										1		1
635 South Langhorne, Bucks Co. (Langhorne Spring Water Co.)													
636 South Lebanon Township, Lebanon Co. (Lebanon Valley Consolidated Water Supply Co.)													
637 South Londonderry Township, Lebanon Co. (Adjutant General's Dept. National Guard Camp Ground) (Pennsylvania Chautauqua Association.)													
638 South Middletown Township, Cumberland Co. (J. C. Bucher, Boiling Springs.)													
		300 South Pittsburgh Water Co. (Supplies Beech View, Bridgeville, Carnegie, Carrick, Crafton, Greentree, Hays, Heidelberg, Ingram, Knoxville, Mt. Oliver, St. Clair Boroughs and Baldwin, Bethel, Chartiers, Collier, Jefferson, Lower St. Clair, Mifflin, Robinson, Scott, Snowden, Union and Upper St. Clair Townships, also Pittsburgh City—38th and 42d Wards, Sheraden—(old 43d Ward, and West Liberty District) and through a subsidiary company which has received a permit supplies Whitaker, Allegheny Co.)							1				1
639 South Renovo, Clinton Co.,	109			1									1
South Sharon, now Farrell q. v.,													
640 South Strabane Township, Washington Co.		301 South Strabane Water Co. (Supply from Citizens Water Co. of Washington.)									1		1
641 South Union Township, Fayette Co. (Trotter Water Co.)													

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915—Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Classification of Water Works.			Permits and Decrees.										
	Municipal.	Water Company.	Miscellaneous.	1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
642 Southwest Greensburg, Westmoreland Co. (Westmoreland Water Co.)													
643 Spangler, Cambria Co. (Northern Cambria Water Co.)													
		302 Spring Brook Water Supply Co. (Supplies in Lackawanna Co., Scranton City, Moosic, Old Forge and Taylor Boroughs, and Lackawanna Township, and in Luzerne Co., Pittston and Wilkes-Barre cities, Ashley, Avoca, Courtdale, Dorranceton, Duryea, Edwardsville, Exeter, Forty Fort, Hughestown, Kingston, Laflin, Larksville, Laurel Run, Luzerne, Miners Mills, Nanticoke, Parsons, Plymouth, Sugar Notch, Swoyersville, Warrior Run, West Pittston, West Wyoming, Wyoming, Yatesville Boroughs and Hanover, Jenkins, Kingston, Newport, Pittston, Plains, Plymouth, Pringle and Wilkes-Barre Townships).					1					1
644 Spring City, Chester Co. (Home Water Co.) (Montgomery Co.) (See also Eastern Pennsylvania State Institution for Feeble-Minded and Epileptic).													
645 Springdale, Allegheny Co. (Inc. in 1903) (See also Springdale Water Co.)	110							1		1	1		3

646 Springdale Township, Allegheny Co. (See also Tarentum Water Co.)		303 Springdale Water Co. (Incorporated April 27, 1905, for Springdale Township, Allegheny Co.) (Supplies Springdale, Allegheny Co.)					1							1
647 Springetsbury Township, York Co. (York Water Co.)														
648 Springfield Township, Delaware Co.,		304 Springfield Water Co. (Supplies in Delaware Co., Aldan, Clifton Heights, Collingdale, Colwyn, Darby, Eddystone, Glenolden, Lansdowne, Norwood, Prospect Park, Ridley Park, Sharon Hill and Yeadon Boroughs, and Darby, Haverford, Marple, Ridley, Springfield, Tinicum and Upper Darby Townships,—in Montgomery Co., Lower Merion Township and Narberth Borough and Overbrook, Philadelphia).					1			1				2
649 Springfield Township, Montgomery Co.,		305 Springfield Consolidated Water Co. (Supplies in Delaware Co.—Radnor Township, in Chester Co., Easttown, Schuylkill, Tredyffrin, E. Whiteland, and Willistown Townships. In Montgomery Co., Abington, Cheltenham, Moreland, Plymouth, Springfield, Upper Dublin, Upper Merion and Whitemarsh Townships and Conshohocken and Rockledge Boroughs and Oak Lane, Philadelphia).					1			1				2
650 Spring Garden Township, York Co. (York Water Co.)														
651 Spring Township, Berks Co. (Sinking Spring Water Co.)														
352 Spring Township, Centre Co. (Pleasant Gap Water Supply Co.)														
		306 Spring Water Co. of Kane, Kane, McKean Co.)										1		1

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915—Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Classification of Water Works.			Permits and Decrees.									
	Municipal.	Water Company.	Miscellaneous.	1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
			53 State Asylum for Chronic Insane of Pennsylvania Pennsylvania (Wernersville P. O., Heidelberg Township Berks Co.)					1					1
653 State College, Centre Co. (See also University Water Co.)		307 State College Water Co. (also supplies Harris Township, Centre Co.)				1							1
			54 State Hospital for Insane (Mahoning Township, Montour Co., near Danville).		3					1		1	5
			55 State Institution for Feeble-Minded of Western Pennsylvania (Polk, Venango Co.)						1				1
654 Steelton, Dauphin Co.,	111			1	2								3
Stockton (P. O.), Hazle Township, Luzerne Co. (Wyoming Valley Water Supply Co., Hezleton Dept.)													
			56 Stone, Raymond D. (Bridgeton Village, Bridgeton Township, Bucks Co.)				1						1
		308 Stone Hill Water Co. (Rouseville, Venango Co.)									1		1

655 Stonycreek Township, Cambria Co. (Johnstown Water Co.)												
656 Stowe Township, Allegheny Co. (Ohio Valley Water Co.) (South Pittsburgh Water Co.)												
657 Stoyestown, Somerset Co.,	309 Stoyestown Water Co.,	1										1
658 Stroudsburg, Monroe Co.,	310 Stroudsburg Water Supply Co.,				1				1	2	4
	311 Suburban Water Co. of Allegheny Co., Pa. (Oakmont and Verona, Allegheny Co.) (Supplies also through subsidiary companies which have received permits Penn and Plum Townships, Allegheny Co.)				2	1		1	1		5
659 Sugar Creek Township, Venango Co. (Venango Oil and Land Co.)												
660 Sugar Notch, Luzerne Co. (Spring Brook Water Supply Co.)												
661 Summerhill Township, Cambria Co. (Summit Water Supply Co.)												
662 Summit Hill, Carbon Co.,	312 Summit Hill Water Co.,									1	1
663 Summit Township, Somerset Co.,												
	313 Summit Water Supply Co. (System for Lilly, Cambria Co.)									1	1
	314 Summit Water Supply Co. (System for Beaverdale (P. O.) Summerhill Township, Cambria Co.)									1	1
664 Sunbury, Northumberland Co.,	315 Sunbury Water Co. (supplies also Agusta Township, Northumberland Co.)				1			1	1	1	3
665 Susquehanna, Susquehanna Co. (Canawacta Water Supply Co.)												
666 Susquehanna Township, Cambria Co. (Northern Cambria Water Co.)												

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915—Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Municipal.	Classification of Water Works. Water Company.	Miscellaneous.	Permits and Decrees. 1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
667 Susquehanna Township, Dauphin Co. (See also Dauphin Consolidated Water Supply Co.)	---	316 Susquehanna Township Water Co. (Supply from Lebanon Valley Consolidated Water Supply Co.)				1							1
668 Swatara Township, Dauphin Co. (Beaver Creek Water Co.) (Eastmere Water Co.) (Paxtang Consolidated Water Co.) Rutherford Heights Water Supply Co. Supply from Hummelstown Consolidated Water Co.)	---												
669 Swissvale, Allegheny Co. (Pennsylvania Water Co.)													
670 Swoyersville, Luzerne Co. (Spring Brook Water Supply Co.)	---												
671 Sykesville, Jefferson Co.,	112										1		1
672 Tamaqua, Schuylkill Co.,	113					1							1
673 Tarentum, Allegheny Co. (See also Tarentum Water Co.)	114								2	2			4
		317 Tarentum Water Co. (Purchased in 1906 by Allegheny Valley Water Co., which has charter rights in Brackenridge, Cheswick and Tarentum Boroughs and E. Deer, Harmar, Harrison and Springdale Townships, Allegheny Co. (Not active in Cheswick Borough and Harmar and Springdale Townships).		1									1

674 Taylor, Lackawanna Co. (Spring Brook Water Supply Co.)														
675 Taylor Township, Lawrence Co. (West Pittsburgh Water Co.)														
676 Telford, Bucks Co. (Rock Hill Water Co.)														
	318 Telford Water Co. (W. Telford, Montgomery Co.)													1
677 Texas Township, Wayne Co. (Honesdale Consolidated Water Co.)														
678 Thompsontown, Juniata Co. (H. W. Wickersham, of Thompsontown Water Co., unine.)														
679 Three Springs, Huntingdon Co.,	319 Three Springs Water Co.,												1	1
680 Throop, Lackawanna Co. (Scranton Gas and Water Co.)														
681 Tinicum Township, Delaware Co. (Springfield Water Co.)														
682 Tioga, Tioga Co.,	320 Tioga Water Works Co.,												1	1
683 Tobyhanna Township, Monroe Co. (F. C. Miller for Pocono Pines Village).														
Tomhicken Village, Blackcreek Township, Luzerne Co. (Wyoming Valley Water Supply Co., Hazleton Dept.)														
684 Towanda, Bradford Co.,	321 Towanda Water Works (also supplies Monroe, Bradford Co.)										1			1
685 Trafford, Westmoreland Co. (Pennsylvania Water Co.)														
Trauger (P. O.), Mt. Pleasant Township, Westmoreland Co. (Sewickley Water Co.)														
686 Tredyffrin Township, Chester Co. (Springfield Consolidated Water Co.)														

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915—Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Classification of Water Works.		Permits and Decrees.										
	Municipal.	Water Company.	Miscellaneous.	1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
687 Tremont, Schuylkill Co.,		322 Tremont Water and Gas Co.,					1						1
		323 Trevorton Water Supply Co. (Zerbe Township, Northumberland Co.)				1							1
		324 Trevose Manor Spring Water Co. (Bensalem Township, Bucks Co.)				1							1
		Tri-Cities Water Co. (new name of consolidation Aug. 15, 1912, of Charleroi, Donora and Monessen Water Companies.) (Supplies Charleroi, Donora, Monessen and North Charleroi Boroughs and Carroll and Fallowfield Townships, Washington Co.; and Rostraver Township, Westmoreland Co.)											
		325 Trotter Water Co. (Supplies Fairchance Borough, N. Union, S. Union, German, Georges, Dunbar, Upper Tyrone, Lower Tyrone, and Connellsville Townships, Fayette Co., and E. Huntingdon Township, Westmoreland Co.) (Distributing system in Fairchance owned by borough).										1	1
		326 Trout Run Water Co. (Duncannon, Perry Co.)				1							1
688 Troy, Bradford Co.,	115								1	1		1	3
689 Turbett Township, Juniata Co. (Port Royal Water Supply Co.)													

690 Turtle Creek, Allegheny Co. (Pennsylvania Water Co.)														
691 Tuscarora Township, Perry Co. (Geo. A. Rebok).														
692 Tyrone, Blair Co. (Bald Eagle Water Co.)														
		327 Union Water Co. (Supply from Beaver Valley Water Co.) (Beaver Falls, Beaver Co.)										1	1	
693 Uniontown, Fayette Co.,		328 Uniontown Water Co.,						1					1	
694 Union Township, Allegheny Co. (South Pittsburgh Water Co.)														
695 Union Township, Berks Co. (Geigertown Water Co., uninc.)														
696 Unionville, Centre Co. (Fleming P. O.)	116								1			1	2	
United (P. O.), Mt. Pleasant Township, Westmoreland Co. (Sewickley Water Co.)														
697 Unity Township, Westmoreland Co. (Sewickley Water Co.) (Westmoreland Water Co.)														
		329 Unity Water Co. (Supply from Suburban Water Co. of Allegheny Co.) (Penn Township, Allegheny Co.)						1					1	
		330 University Water Co. (Auxuliary supply from State College Water Co.) (Supplies College and Ferguson Townships and State College Borough, Centre Co.)					1						1	
698 Upland, Delaware Co. (New Chester Water Co.)														
699 Upper Darby Township, Delaware Co. Springfield Water Co.)														

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915—Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Municipal.	Classification of Water Works.		Permits and Decrees.									
		Water Company.	Miscellaneous.	1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
700 Upper Dublin Township, Montgomery Co. (Springfield Consolidated Water Co.)	----												
701 Upper Gwynedd Township, Montgomery Co.	----	331 Upper Gwynedd Water Co. (Supply from North Wales Water Co.)							1				1
Upper Mauch Chunk, Carbon Co. (Mauch Chunk).	----	332 Upper Mauch Chunk Water Co. (Inc. Oct. 26, 1872).				1				1			2
702 Upper Merion Township, Montgomery Co. (Springfield Consolidated Water Co.) (Valley Forge Park Commissioners. Supply from Springfield Consolidated Water Co.)	----												
703 Upper Milford Township, Lehigh Co. (Mountain Water Co.)	----												
704 Upper Mt. Bethel Township, Northampton Co. (Portland Water Co.)	----												
705 Upper Nazareth Township, Northampton Co. (Blue Mountain Consolidated Water Co.)	----												
706 Upper Paxton Township, Dauphin Co. (Berry Springs Water Co.)	----												
707 Upper Providence Township, Montgomery Co. (Phoenixville Municipal Supply).	----												
708 Upper St. Clair Township, Allegheny Co. (South Pittsburgh Water Co.	----												

709 Upper Turkeyfoot Township, Somerset Co. (Hillside Water Supply Co.)												
710 Upper Tyrone Township, Fayette Co. (Trotter Water Co.)												
			57 Valley Forge Park Commissioners (Sup- from Springfield Consolidated Water Co.) (Upper Merion Township, Montgomery Co.)				1					1
		333 Valley Water Co. of Rochester, supply from Beaver Valley Water Co. (Rochester, Beaver Co.)									1	1
711 Vandling, Lackawanna Co. (Consolidated Water Supply Co.)												
Van Meter (P. O.), Rostraver Township, Westmoreland Co. (Pittsburgh Coal Co.)												
			58 Venango Oil and Land Co. (Reno (P. O.), Sugar Creek Township, Venango Co.)			1				1		2
		334 Venango Water Co. (received permits* in 1906 and 1907, plant purchased by city of Franklin, Venango Co.)		*								*
712 Verona, Allegheny Co. (Suburban Water Co. of Allegheny Co., Pa.)												
			59 Vesta Coal Co. (Point View Village, E. Bethlehem Township, Washington Co.)				1				1	2
713 Wall, Allegheny Co. (East McKeesport Water Co.)												
714 Wampum, Lawrence Co.,	117									1	1	2
715 Warren, Warren Co.,		335 Warren Water Co.,		1	1			1				3

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915—Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Municipal.	Classification of Water Works.		Permits and Decrees.									
		Water Company.	Miscellaneous.	1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
716 Warrior Run, Luzerne Co. (Spring Brook Water Supply Co.)	----												
717 Washington, Washington Co. (Citizens Water Co. of Washington, Pa.	----												
718 Washington Township, Franklin Co. (Blue Ridge Water Supply Co.) (Rouzerville Water Co.)	----												
719 Washington Township, Lehigh Co.,	----	336 Washington Water Supply Co.,							1				1
720 Washington Township, Northampton Co. (Blue Mountain Consolidated Water Co.) (Pompeii Water Co.)	----												
721 Waterford, Erie Co.,	----		60 Waterford Water Co., uninc., (Chas. Himrod, proprietor).		1					1	1	1	4
722 Waymart, Wayne Co.,	----	337 Waymart Water Co.,										1	1
723 Waynesboro, Franklin Co.,	----	338 Waynesboro Water Co.,										2	2
724 Waynesburg, Greene Co.,	----	339 Waynesburg Water Co.,										2	2
725 Wayne Township, Lawrence Co. (Ellwood Water Co.)	----												
726 Weatherly, Carbon Co.,	----	340 Weatherly Water Co.,					1				2		3
		341 Weldon Water Co. (Supply from Moreland Spring Water Co.) (Abington Township, Montgomery Co.)					1						1

727 Wellsboro, Tioga Co., Wernersville, Berks Co. (See State Asylum).		342 Wellsboro Water Co.,			2				1	1			4
728 West Berwick, Columbia Co.,		343 West Berwick Water Supply Co.,				1							1
729 West Bethlehem, Lehigh Co. (Bethlehem City Water Co.)													
730 West Bethlehem Township, Washington Co. (Marianna Water Co.)													
West Bridgewater (P. O.), for Bridgewater, Beaver Co. (West Side Water Co. Supply from Beaver Valley Water Co.)													
731 West Brownsville, Washington Co. (Brownsville Water Co.)													
732 West Chester, Chester Co.,	118						1						1
733 West Conshohocken, Montgomery Co.,		344 West Conshohocken Water Co.,							2				2
734 West Donegal Township, Lancaster Co. (Rheems Water Co.)													
735 West Elizabeth, Allegheny Co. (Monongahela Valley Water Co.)													
736 Westfall Township, Pike Co. (Matamoras Citizens Water Co.)													
737 Westfield, Tioga Co.,	119										1		1
738 West Hazleton, Luzerne Co. (Diamond Water Co. of Hazleton) (Hazleton Dept. Wyoming Valley Water Supply Co.)													
		345 West Houtzdale Water Co. (Same source as Houtzdale Water Co.) (Woodward Township and Brisbin Borough, Clearfield Co.)				1							1
739 West Mahanoy Township, Schuylkill Co. (Anthracite Water Co.) (Girard Water Co.)													

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915—Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Classification of Water Works.			Permits and Decrees.									
	Municipal.	Water Company.	Miscellaneous.	1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
740 West Manchester Township, York Co. (York Water Co.)													
741 Westmont, Cambria Co. (Johnstown Water Co.)													
			61 Westmoreland-Connellsville Coal and Coke Co. (Fairfield Township, Westmoreland Co.)									1	1
		346 Westmoreland Water Co. (Greensburg (part), Irwin, Jeannette, Manor, North Irwin, Penn and Youngwood Boroughs and Hempfield, North Huntingdon and Penn Townships, Westmoreland Co. Permit* to Westmoreland Water Co. of Hempfield Township plant purchased by Westmoreland Water Co. Auxiliary supply from Mountain Water Supply Co.)				*1					1	2
		347 Westmoreland Water Co. (Derry Division. Purchased Derry Water Co. which received permit* in 1914).									*1		1
		348 Westmoreland Water Co. of Hempfield Township (received permit in 1909 prior to purchase by Westmoreland Water Co.)				*							*
742 West Norriton Township, Montgomery Co.		349 West Norriton Water Co. (Supply from Norristown Insurance and Water Co.)							1				1

West Pittsburgh (P. O.) Village, Taylor Township, Lawrence Co.		350 West Pittsburgh Water Co. (for Taylor Township, Lawrence Co.)				1			1					2
743 West Pittston, Luzerne Co. (Spring Brook Water Supply Co.)														
744 West Pottsgrove Township, Montgomery Co. (Pottstown Gas and Water Co.)														
745 West Reading, Berks Co.		351 West Reading Water Co. (also supplies Wyomissing (part), Berks Co.)											1	1
746 West Reynoldsville, Jefferson Co. (Reynoldsville Water Co.)														
		352 West Salem Water Supply Co. (Salem Township, Luzerne Co.)						1						1
		353 West Side Water Co. (Supply from Beaver Valley Water Co.) (Bridgewater, Beaver Co.)											1	1
747 West Telford, Montgomery Co. (Telford Water Co.)														
748 West View, Allegheny Co. (Ohio Valley Water Co.)														
749 West Wyoming, Luzerne Co. (Spring Brook Water Supply Co.)														
750 Whitaker, Allegheny Co.		354 Whitaker Water Co. (Supply from S. Pittsburgh Water Co.)											1	1
751 White Township, Beaver Co. (Citizens Water Co. of College Hill).														
752 Whitehall Township, Lehigh Co. Clear Springs Water Co.)														
753 Whitemarsh Township, Montgomery Co. (Springfield Consolidated Water Co.)														
754 Wickboro, Armstrong Co. (Citizens Water Co. of Kittanning).														

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915—Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Municipal.	Classification of Water Works.		Permits and Decrees.									
		Water Company.	Miscellaneous.	1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
			62 Wickersham, H. W., of Thompsontown Water Co., uninc. (Thompsontown, Juniata Co.)	----	----	----	1	----	1	----	1	----	3
Wiconisco Terrace Village, Upper Paxton Township, Dauphin Co. (Berry Springs Water Co.)	----	----	----	----	----	----	----	----	----	----	----	----	----
755 Wiconisco Township, Dauphin Co. (Lykens Water Co.)	----	----	----	----	----	----	----	----	----	----	----	----	----
756 Wilkes-Barre (city), Luzerne Co. (Spring Brook Water Supply Co.)	----	----	----	----	----	----	----	----	----	----	----	----	----
757 Wilkes-Barre Township, Luzerne Co. (Spring Brook Water Supply Co.)	----	----	----	----	----	----	----	----	----	----	----	----	----
758 Wilkinsburg, Allegheny Co. (Pennsylvania Water Co.)	----	----	----	----	----	----	----	----	----	----	----	----	----
759 Wilkins Township, Allegheny Co. (Pennsylvania Water Co.)	----	----	----	----	----	----	----	----	----	----	----	----	----
760 Williamsburg, Blair Co.,	120	----	----	----	----	----	----	----	----	----	----	2	2
			63 Williams, James S. (Somerton, Philadelphia).	1	----	----	----	----	----	----	----	----	1
761 Williamsport (city), Lycoming Co. (see also Citizens Water and Gas Co. of Williamsport).	----	355 Williamsport Water Co. (One of the permits issued in 1910 to Citizens Water and Gas Co., now part of Williamsport Water Co.)	----	----	----	----	2	----	----	----	----	1	3

762 Willistown Township, Chester Co. (Springfield Consolidated Water Co.)	----													
763 Wilmerding, Allegheny Co. (East McKeesport Water Co.) (Pennsylvania Water Co.)	----													
764 Wilson, Allegheny Co. (Monongahela Valley Water Co.)	----													
765 Windber, Somerset Co.,	----	356 Windber Water and Power Co. (also supplies in Cambria Co.—Scalp Level Borough and Richland Township, and in Somerset Co.—Paint and Windber Boroughs and Paint and Shade Townships).			2					1				3
766 Wind Gap, Northampton Co. (Blue Mountain Consolidated Water Co.)	----													
767 Windsor, York Co.,	121												1	1
		357 Windsor Water Co. (Hamburg, Berks Co.)								1	1			2
768 Winslow Township, Jefferson Co. (Reynoldsville Water Co.)	----													
769 Womelsdorf, Berks Co.,	----	358 Womelsdorf Consolidated Water Co. (Also supplies Robesonia (P. O.), Heidelberg Township, Berks Co. and through a subsidiary company which has received a permit, Sheridan (P. O.), Millcreek Township, Lebanon Co.)									2			2
770 Woodlawn, Beaver Co. (Jones and Laughlin Steel Co.)	----													
771 Woodward Township, Clearfield Co. (West Houtzdale Water Co. Same source as Houtzdale Water Co.)	----													
772 Wormleysburg, Cumberland Co. (Riverton Consolidated Water Co.)	----													
773 Worth Township, Centre Co. (Port Matilda Water Co.)	----													

WATER WORKS PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH, 1905-1915—Continued.

Municipalities Supplied (Numbered); also Important Villages and Post Offices.	Municipal.	Classification of Water Works.		Permits and Decrees.									
		Water Company.	Miscellaneous.	1905-06-07	1908	1909	1910	1911	1912	1913	1914	1915	Total.
774 Wrightsville, York Co.,	----	359 Wrightsville Water Supply Co.,		----	----	1	----	----	----	----	1	----	2
775 Wyalusing, Bradford Co.,	----	360 Wyalusing Water Co.,		----	----	----	1	----	----	----	----	----	1
			64 Wyland, John F. (Allison Park, Hampton Township, Allegheny Co.)	----	----	----	----	1	----	----	----	----	1
776 Wyoming, Luzerne Co. (Spring Brook Water Supply Co.)	----	361 Wyoming Valley Water Supply Co., Blackwood Dept., supplies Blackwood Village, Reilly Township, Schuylkill Co. (Permit* to Blackwood Water Co. now Blackwood Dept. Wyoming Valley Water Supply Co.)		----	----	*1	----	----	----	----	----	1	2
		362 Wyoming Valley Water Supply Co., Hazleton Dept. (Supplies Yorktown Village, Banks Township, Carbon Co., Deringer, Fern Glen (P. O.), Gowen (P. O.) and Tomhicken Village, Black Creek Township, Luzerne Co., Harwood, and Stockton (P. O.) Villages, Hazle Township, Luzerne Co., Oneida (P. O.) Village, E. Union Township, Schuylkill Co., and Buck Mountain (P. O.) Village, Mahanoy Township, Schuylkill Co.) (Permits* were issued, one in 1909 to the Hazleton Water Co., one in 1909 to Milnesville Water Co., one each in 1910, 1911 and 1913 to the Mahanoy City Water Co., now in the Hazleton Dept., Wyoming Valley Water Supply Co.)		----	----	*2	*1	*1	----	*1	----	1	6

777 Wyomissing, Berks Co. (Sinking Spring Water Co.) (West Reading Water Co.)													
778 Yatesville, Luzerne Co. (Spring Brook Water Supply Co.)													
779 Yeadon, Delaware Co. (Springfield Water Co.)													
Yeagertown (P. O.), Derry Township, Mifflin Co. (Lewistown and Reedsville Water Co.)													
780 Yoe, York Co.,		363 Yoe Water Co. (Permit* in 1909. Merged into York Co. Consolidated Water Co. April 1, 1909, which see).			*								*
781 York (city), York Co.,		364 York Water Co. (Also supplies Hellam, Manchester, Springetsbury, Spring Garden and West Manchester Townships, York Co.)		1		1	1			1			4
		365 York County Consolidated Water Co. (Dallastown and Yoe). (Formed by merger April 1, 1909, including Yoe Water Co. which received permit* in 1909).			*1			1	1				3
Yorktown Village, Banks Township, Carbon Co. (Wyoming Valley Water Supply Co., Hazleton Dept.)													
782 Young Township, Indiana Co. (Rochester-Pittsburgh Coal and Iron Co.)													
783 Youngsville, Warren Co.,	122											1	1
784 Youngwood, Westmoreland Co. (Westmoreland Water Co.)													
785 Zerbe Township, Northumberland Co. (Trevorton Water Supply Co.)													
			65 Zierdon, W. E. (Johnsonburg, Elk Co.)	1									1

CLASSIFICATION OF SOURCES OF WATER SUPPLY COVERED IN PERMITS AND DECREES ISSUED 1905-1915.

Of the five hundred and fifty-two water works systems the subjects of permits or decrees (and it should be understood that every permit is a decree, but that every decree is not necessarily a permit), one hundred and fifty-three systems obtain their water from ground water sources only, two hundred and nineteen from surface sources only, and one hundred and sixty-five from both ground and surface sources, and fifteen systems, those of the Blackwood Water Company, the Bristol Water Company, the Citizens Water and Gas Company of Williamsport, the Citizens Water Company of Kittanning, the Derry Water Company, the East Mere Water Company, the Ebensburg Coal Company, the Hazleton Water Company, the Mahanoy City Water Company, the Martindale Water Company, the Mauch Chunk Township Water Company, the Milnesville Water Company, the Venango Water Company, the Westmoreland Water Company of Hempfield Township and the Yoe Water Company, have been taken over by other owners, to whom subsequent permits or decrees have been issued as shown in the preceding table.

In the following table, showing the source from which the supply is obtained for each system, are given the names of the owners of water works systems relative to which permits or decrees have been issued.

SOURCES OF SUPPLY OF WATER WORKS SYSTEMS WHICH HAVE BEEN THE SUBJECTS OF PERMITS OR DECREES, 1905-1915.

	Water Works Owner.	Sources.		
		Wells.	Springs.	Surface.
1.	Adjutant General's Department (National Guard Encampment, South Londonderry Twp., Lebanon Co.),	*		
2.	Akron Borough,	*		
3.	Albion Borough,		*	
4.	Altoona City,			*
5.	Alburtis Borough,		*3	
6.	Allegheny Water Company,		*	*
7.	Allentown City,		*	
8.	Allison Park Water Company,	*		
9.	Altoona City,			*
10.	Alwine, Jerry (Johnstown),		*	
11.	Ambridge Borough,	*		
12.	Annville Water Company,	*	*	
13.	Anthracite Water Company,	*		*
14.	Apollo Water Works Company,			*
15.	Arendtsville Water Company,		*	*
16.	Armstrong Water Company,			*
17.	Arnot Water Company,	*		*
18.	Ashland Borough,			*
19.	Aspers Water Company,		*	

SOURCES OF SUPPLY OF WATER WORKS SYSTEMS WHICH HAVE BEEN THE SUBJECTS OF PERMITS OR DECREES, 1905-1915—Continued.

	Water Works Owner.	Sources.		
		Wells.	Springs.	Surface.
20.	Austin Borough,	*	*	*
21.	Avonmore Borough,		*	
22.	Baden Borough,	*		
23.	Bald Eagle Water Company,			*
24.	Bangor Water Company,		*	*
25.	Barnesboro Borough,	*		*
26.	Barnesboro Water Company (Merged with Spangler Water Company into Northern Cambria Water Company; distributing pipes in Barnesboro sold to borough in 1913),			*
27.	Bath Borough,		*	*
28.	Bear Gap Water Company,			*
29.	Beaver Creek Water Company,			*
30.	Beavertown Borough,			*
31.	Beaver Valley Water Company,			*
32.	Bedford Borough,		*	*2
33.	Bens Creek Water Company,			*
34.	Benton Water Company,		*	
35.	Berkebile, S. P. (Benson),		*	
36.	Berry Springs Water Company,		*3	
37.	Berwick Water Company,			*
38.	Bethlehem City,	*	*	
39.	Bethlehem City Water Company,		*	*
40.	Bethlehem Steel Company,		*	
41.	Biglerville Water Company,		*	
42.	Blairsville Borough,	*		*
43.	Blandburg Water Company,			*
44.	Bloomfield Water and Sewer Company,		*	
45.	Bloomsburg Water Company,			*
46.	Blossburg Water Company,			*
47.	Blue Mountain Consolidated Water Company,	*	*1	*
48.	Blue Ridge Water Supply Company,	*		
49.	Boalsburg Water Company,			*
50.	Boyer, J. Calvin (Monroe Twp., Juniata Co.),			*
51.	Boyer, J. Calvin (Perry Twp., Snyder Co.),		*	
52.	Boyertown Borough,	*	*	*
53.	Bradford City,	*		*
54.	Bradford Water Company (not built),			*
55.	Briar Creek Water Supply Company,		*	*
56.	Brickel, B. W. (Dallas),	*		
57.	Bright Run Water Company,			*
58.	Bristol Borough,			*
59.	Brockway Crystal Water Company,			*
60.	Brookville Water Company (plant sold to borough),			*
61.	Brownsville Water Company,			*
62.	Bucher, J. C. (Boiling Springs),	*		*
63.	Buck Hill Water Company,			*
64.	Bunday's Water Company,		*	
65.	Butler Water Company,			*
66.	Butler Township Water Company,			*
67.	Cairnbrook Water Company (filtration to be approved and installed before using source),			*
68.	California Water Company,			*
69.	Cambridge Springs Borough,	*		*
70.	Canawacta Water Supply Company,		*	*
71.	Carlisle Gas and Water Company,			*
72.	Catasauqua Borough,	*	*	
73.	Catawissa Water Company,	*	*	*
74.	Centermoreland Water Company,	*		
75.	Chambersburg Borough,			*
76.	Charleroi Water Company (sold to Monessen Water Company, now Tri-Cities Water Company),			*
77.	Chatham Water Company,			*
78.	Cherry Tree Water Company,			*
79.	Chichester Water Company (supply from New Chester Water Company,			*
80.	Christiana Gravity Water Company,		*	
81.	Citizens Water Company of Canton,			*
82.	Citizens Water Company of Cecil Township,	*		*
83.	Citizens Water Company of College Hill,	*		
84.	Citizens Water Company of Confluence,			*
85.	Citizens Water Company of Gordon,		*	*
86.	Citizens Water Company of McDonald,	*		*
87.	Citizens Water Company of Mt. Pleasant Township (supply from Citizens Water Company of McDonald),	*		*
88.	Citizens Water Company of New Bethlehem,			*
89.	Citizens Water Company of North Fayette Township (supply from Citizens Water Company of McDonald),	*		*

SOURCES OF SUPPLY OF WATER WORKS SYSTEMS WHICH HAVE BEEN THE SUBJECTS OF PERMITS OR DECREES, 1905-1915—Continued.

	Water Works Owner.	Sources.		
		Wells.	Springs.	Surface.
90.	Citizens Water Company of Robison Township,	*		*
91.	Citizens Water Company of Scottdale,			*
92.	Citizens Water Company of South Fayette Township (supply from Citizens Water Company of McDonald),	*		*
93.	Citizens Water Company of Washington,			*
94.	City of New Castle Water Company,			*
95.	City Water Company of Scranton,	*		
96.	Clarion Water Company,	*		*2
97.	Clearfield Water Company,			*
98.	Clear Springs Water Company,		*	*
99.	Clymer Water Company,			*
100.	Coatesville Borough,			*
101.	College Hill Borough Water Company,			*
102.	Columbia Water Company,			*
103.	Colver Water Company,			*
104.	Conemaugh and Franklin Water Company,	*		*
105.	Conemaugh Smokeless Coal Company,	*8		
106.	Conneaut Lake Borough,	*		
107.	Conneautville Borough,		*	
108.	Connellsville Water Company,			*
109.	Consolidated Water Supply Company,			*
110.	Consolidated Water Company of Coudersport,	*	*	*
111.	Consolidated Coal Company (Althouse Village, Brothers Valley Twp., Somerset County),	*		*
112.	Consolidated Coal Company (Jenner Township, Somerset County),	*3-8		
113.	Conway Borough,	*		
114.	Coopersburg Borough,	*	*	
115.	Coraopolis Borough,	*		
116.	Cresson Borough (supply from Summit Water Supply Company),			*
117.	Cresson Water Company,	*	*	*3
118.	Crosby Gas Company (Newerf Village, Norwich Twp., McKean County),		*	
119.	Crystal Springs Park Water Company,	*		*
120.	Curtis, J. G., Leather Company (Ludlow),		*	
121.	Dallas Water Company,		*	
122.	Dalmatia Water Company,	*	*3	
123.	Danville Borough,			*
124.	Dauphin Consolidated Water Supply Company (Dauphin Division),			*
125.	Dauphin Consolidated Water Supply Company (Enola Division),	*		*
126.	Dawson Borough,	*		
127.	Dayton Borough,	*		
128.	Denver Borough,		*	*
129.	Diamond Water Company of Hazleton,	*	*	*
130.	Dickerson Run Water Company,	*		
131.	Dillsburg Water Company,		*	
132.	Dingmans Ferry Water Company,			*
133.	Donora Water Company (sold to Monessen Water Company, now Tri-Cities Water Company),			*
134.	Dover Borough,	*		
135.	Doylestown Borough,	*	*	*2
136.	Drake, D. D. (Delaware Water Gap, Monroe County),	*	*	*
137.	DuBois Borough,			*
138.	DuBois, J. E. (DuBois Borough),		*	*
139.	Duquesne Borough,	*		
140.	Eagles Mere Water Company,	*		*1
141.	East Brandy Water Works Company,	*	*	
142.	East Donegal Township Water Company (from Florin Water Company),	*		
143.	Eastern Pennsylvania State Institution for Feeble-Minded and Epileptic,	*		*
144.	East Greenville Borough,			*
145.	East McKeesport Water Company,		*	*
146.	East Ogontz Water Company,	*		
147.	East Stroudsburg Borough,	*		*
148.	Ebensburg Borough,	*	*	
149.	Edgemont Water Company (supply from New Chester Water Company),			*
150.	Edgeworth Water Company,	*	*	*
151.	Edinboro Borough,	*		
152.	Ellwood Water Company,			*
153.	Emaus Borough,	*	*	

SOURCES OF SUPPLY OF WATER WORKS SYSTEMS WHICH HAVE BEEN THE SUBJECTS OF PERMITS OR DECREES, 1905-1915—Continued.

	Water Works Owner.	Sources.		
		Wells.	Springs.	Surface.
154.	Emlenton Water Company,	*		*
155.	Emporium Water Company,			*
156.	Ephrata Borough,	*	*	
157.	Erie City,			*
158.	Everett Water Company,	*	*	*
159.	Evitts Creek Water Company,			*
160.	Extension Water Company of Penbrook (supply from Susquehanna Township Water Company),			*
161.	Fairchance Borough (supply from Trotter Water Company),			*
162.	Fairview Water Company (Athens) (not built),			*
163.	Fairview Water Company (Coolbaugh Township, Monroe County),		*	
164.	Fallsbrook Coal Company,	*		*
165.	Falls Creek Borough,			*
166.	Fallston Water Company (supply from Beaver Valley Water Company),			*
167.	Farwell, Absalom (Chapman Township, Clinton County),		*	
168.	Fayetteville Water Company,			*
169.	Fenstermacher, Albert R. (Bottled water) (Susquehanna Township, Dauphin County),		*	
170.	Field, E. Dale (Smithfield, Fayette County),			*
171.	Fleetwood Borough,		*	*
172.	Florin Water Company,	*		
173.	Foxburg Water Works Company,	*		*
174.	Franklin City,	*	*	*
175.	Freedom Water Company (supply from Beaver Valley Water Company),			*
176.	Freeport Water Works Company,			*
177.	Galeton-Eldred Water Company (for Eldred),	*	*	
178.	Galeton-Eldred Water Company (for Galeton),		*	*
179.	Gallitzin Borough,	*		*
180.	Garrett Water Company,			*
181.	Gaysport Borough,			*
182.	Geigertown Water Company,		*	
183.	General Water Company,			*
184.	Genesee Water Company,		*	
185.	Gettysburg Water Company,	*1		*
186.	Gilberton-Schuylkill Water Company (supply from Bright Run Water Company),			*
187.	Girardville Water Company (supply from Bright Run Water Company),			*
188.	Girard Water Company,			*
189.	Gladehurst Water Company,		*	
190.	Glasgow Borough,	*		
191.	Glenbrook Water Company (not built),			*
192.	Glen Mills Schools, Girls' Department (Darling),	*		*5
193.	Glen Rock Borough,	*	*	*
194.	Gratz Water Company,		*3	
195.	Gravel Hill Water Supply Company (supply from Lebanon Valley Consolidated Water Supply Company),			*
196.	Gravity Water Company,			*
197.	Greencastle Borough,		*	
198.	Green Hill Water Company,	*		
199.	Greenville Water Company,			*
200.	Grove City Borough,	*		
201.	Halifax Water Company,		*	*1
202.	Hall, W. C. (South Abington Township, Lackawanna Co.),		*	
203.	Hallstead Water Company,			*
204.	Hamilton Water Company,		*	*
205.	Hammersley Water Company,	*3		
206.	Hanover and McSherrystown Water Company,	*	*2	*
207.	Harbison-Walker Refractories Company (Rush Township, Centre County),	*		
208.	Harrisburg City,			*
209.	Hatboro Water Company,	*		
210.	Hatfield Borough,	*		
211.	Hawley Water Company,	*	*	*
212.	Haysville Water Company,	*2	*	*
213.	Hazelhurst Water Company,		*	*
214.	Hazle Township Water Company,	*		*
215.	Hegins Water Company,		*	*
216.	Heidelberg Water Company (uninc.),		*	
217.	Hellam Water Company,		*	
218.	Hellertown Borough,		*	
219.	Hershey Water Company,		*	*
220.	Hillside Water Supply Company,			*

SOURCES OF SUPPLY OF WATER WORKS SYSTEMS WHICH HAVE BEEN THE SUBJECTS OF PERMITS OR DECREES, 1905-1915—Continued.

	Water Works Owner.	Sources.		
		Wells.	Springs.	Surface.
221.	Hilltown Water Company,	*		
222.	Hock, Coombe and Brumm (Mar-Lin Village, Norwegian Twp., Schuylkill Co.—supply from Minersville Water Co.),			*
223.	Holmesburg and Disston Water Companies,			*
224.	Home Water Company,			*
225.	Homestead Borough,	*		*
226.	Honesdale Consolidated Water Supply Company,			*
227.	Hooversville Water Company,			*
228.	Hopbottom Water Company,		*	
229.	Horner, H. M. (Summerdale Village, East Pennsboro Twp., Cumberland Co.),	*		
230.	Houtzdale Water Company,	*		*
231.	Hummelstown Consolidated Water Co.,			*
232.	Huntingdon Water Supply Company,			*
233.	Hyndman Water Company,	*		*
234.	Jacks Mountain Water Company,		*	*
235.	Jamestown Water Company,	*		
236.	Jenkintown Water Company (from Moreland Spring Water Company),	*	*	*
237.	Jersey Shore Water Company,			*
238.	Johnsonburg Water Company,		*	*
239.	Johnstown Water Company (emergency supply from Manufacturers Water Company),			*
240.	Jones and Laughlin Steel Company (Woodlawn),	*		
241.	Josephine Water Company,	*		
242.	Juniata Borough,			*
243.	Kennett Square Borough,			*
244.	Kensington Water Company,			*
245.	Knoxville Borough,	*	*	
246.	Koppel Water Company,	*2		*
247.	Kulpmont Water Company,			*
248.	Laceyville Borough,	*	*	*
249.	Lancaster City,			*
250.	Lancaster Water Filtration Company (filters water for municipal system),			*
251.	Langhorne Spring Water Company,			*
252.	Lansdale Water Company,	*		
253.	Lansdowne Park Water Company,	*		
254.	Latrobe Water Company,			*
255.	Lebanon City,			*
256.	Lebanon Valley Consolidated Water Supply Company,	*		*
257.	Lehigh Water Company,		*	*
258.	Leiby, E. B. (East Pennsboro Township, Cumberland County),		*	
259.	Lenni Heights Water Company,	*		
260.	Lewistown and Reedsville Water Co.,			*
261.	Ligonier Borough,			*
262.	Littlestown Borough,	*	*	
263.	Lock Haven City,			*
264.	Londonderry Water Company,	*	*	*
265.	Lower Gwynedd Water Company (from North Wales Water Company),	*		
266.	Luzerne County Central Poor District,	*		*
267.	Lykens Water Company,			*
268.	McConnellsburg Water Company,		*	*
269.	McKeesport City,			*
270.	Macungie Borough,		*	*
271.	Madera Water Company,		*	*
272.	Malvern Borough,	*	*	
273.	Manheim Township Water Company (supply from Lancaster City),			*
274.	Mansfield Water Company,		*	*
275.	Marianna Water Company,			*
276.	Marietta Gravity Water Company,			*
277.	Marie Water Company,			*
278.	Mar-Lin Water Company (filtration to be approved and installed before using source; not built),			*3
279.	Mars Borough,	*		
280.	Marysville Water Company,		*	*
281.	Masontown Borough,			*
282.	Matamoras Citizens Water Company,	*		
283.	Mauch Chunk Water Company,	*	*	*
284.	Mechanicsburg Gas and Water Company,		*	*
285.	Media Borough,			*
286.	Mercer Water Company,			

SOURCES OF SUPPLY OF WATER WORKS SYSTEMS WHICH HAVE BEEN THE SUBJECTS OF PERMITS OR DECREES, 1905-1915—Continued.

	Water Works Owner.	Sources.		
		Wells.	Springs.	Surface.
287.	Mercersburg Water Company,			*
288.	Middleburg Water Company,			*
289.	Middleport Water Company (supply from Silver Creek Water Company),			*
290.	Middletown and Swatara Consolidated Water Company,			*
291.	Midland Water Company,			*
292.	Mifflinburg Borough,			*
293.	Mill City Water Company,		*	
294.	Mill Creek Water Company (from Womelsdorf Consolidated Water Company),	*		*
295.	Miller, S. C. (Pocono Pines),	*	*	
296.	Millersburg Home Water Company,	*	*	*
297.	Millerstown Borough,		*	*
298.	Millheim Water Company,			*
299.	Minersville Water Company,			*
300.	Mohnsville Water Company,	*	*	*
301.	Mokoma Spring Water Company,		*	*
302.	Monessen Water Company (now Tri-Cities Water Company),			*
303.	Monongahela City Water Company,			*
304.	Monongahela Valley Water Company,			*
305.	Mont Alto Borough,		*	*
306.	Montgomery Water Company,	*	*	
307.	Moore Water Company (supply from Suburban Water Company of Allegheny County),			*
308.	Morgantown Water Company,		*3	
309.	Moreland Spring Water Company,	*	*	*
310.	Morrellville and Cambria Borough Water Company,	*		*
311.	Morrisville Borough,			*
312.	Moss Glen Water Company (supply from Silver Creek Water Company),			*
313.	Mountain Water Company,	*	*	
314.	Mount Jewett Water Company,	*	*	
315.	Mount Penn Suburban Water Company,	*	*	*
316.	Mount Union Water Company,			*
317.	Mountville Borough,	*	*	
318.	Muncy Water Supply Company,			*
319.	Myerstown Borough,		*	*
320.	Nanty-Glo Water Company (unine.),			*
321.	Natrona Water Company,		*	*
322.	Nescopeck Water Supply Company,		*	*
323.	New Brighton Water Company (supply from Beaver Valley Water Company),			*
324.	New Chester Water Company,			*
325.	Newmanstown Water Company,		*	*
326.	New Oxford Borough,			*
327.	Newport Home Water Company,	*	*	*
328.	New Wilmington Water Supply Company,	*	*	*
329.	Nickerson Water Company,			*
330.	Nippenose Water Company (same source as Jersey Shore Water Company),			*
331.	Norristown Insurance and Water Company,			*
332.	North Abington Water Company,	*	*	
333.	North Annville Water Supply Company (supply from Lebanon Valley Consolidated Water Supply Company),			*
334.	North Cornwall Water Supply Company (supply from Lebanon Valley Consolidated Water Supply Company),			*
335.	North East Borough,		*	*
336.	North Manheim Water Company,			*
337.	North Rochester Water Company (supply from Beaver Valley Water Company),			*
338.	North Strabane Water Company,			*
339.	Northumberland Water Supply Company,	*	*	*
340.	North Wales Water Company,	*		
341.	Oakdale Borough,	*		*
342.	Ogontz Water Company (from Moreland Spring Water Company),	*	*	*
343.	Ohio Valley Water Company,	*		
344.	Oil City,	*	*	
345.	Orbisonia Water Company,		*	
346.	Oxford Borough,	*		
347.	Palmer Water Company,	*	*	*
348.	Panther Valley Water Company,	*		*
349.	Parker City Water Company,			*
350.	Parkesburg Borough,	*	*	
351.	Patton Water Company,			*

SOURCES OF SUPPLY OF WATER WORKS SYSTEMS WHICH HAVE BEEN THE SUBJECTS OF PERMITS OR DECREES, 1905-1915—Continued.

	Water Works Owner.	Sources.		
		Wells.	Springs.	Surface.
352.	Patterson Heights Water Company (supply from Beaver Valley Water Company),			*
353.	Paxtang Consolidated Water Company,		*	
354.	Penn Land Company,			*
355.	Pennsburg Water Company (auxiliary supply from Red Hill Water Company),		*1	*
356.	Pennsylvania Chatauqua Association (Mount Gretna Village, South Londonderry Township, Lebanon County),	*		*
357.	Pennsylvania Industrial Reformatory (near Huntingdon),		*	*
358.	Pennsylvania Railroad (Renovo),			*
359.	Pennsylvania Training School (Morganza),	*	*	*
360.	Pennsylvania Water Company,			*
361.	Perkasie Water Supply Company,			*
362.	Philadelphia City,			*
363.	Phoenixville Borough,			*
364.	Pine Grove Borough,			*
365.	Pine Township Water Company,	*		*
366.	Pittsburgh City,			*
367.	Pittsburgh Coal Company (Van Meter, Rostraver Township, Westmoreland County),			*
368.	Plainfield Water Company,			*
369.	Pleasant Gap Water Supply Company,			*
370.	Pleasantville Borough,	*		
371.	Pole, W. S. (Interurban Villa Sites, Harbor Creek Township, Erie County),	*		
372.	Pompeii Water Company,			*
373.	Portage Water Company,		*	*
374.	Port Allegany Water Company,	*	*	*
375.	Portland Water Company,			*
376.	Port Matilda Water Company,		*	
377.	Port Royal Water Company,		*	*
378.	Portvue Water Company,	*		*
379.	Pottstown Gas and Water Company,			*
380.	Punxsutawney Water Company,	*		*
381.	Pure Mountain Water Company,	*		*
382.	Quakertown Water Company,	*		*
383.	Quarryville Water Company,		*	*
384.	Ramey Water Company,	*		*
385.	Reading City,	*	*	*
386.	Reading Suburban Water Company,	*		*
387.	Rebok, Geo. A. (Tuscarora Township, Perry County),		*	
388.	Red Hill Water Company (auxiliary supply from Pennsburg Water Company),		*	*1
389.	Red Lion Water Company,	*	*	
390.	Reliance Water Company,	*		
391.	Renovo Borough,			*
392.	Reserve Township, Allegheny County (supply from City of Pittsburgh),			*
393.	Reynoldsville Water Company,	*	*	*
394.	Rheems Water Company,	*		
395.	Richland Borough,		*	
396.	Richland Township Water Company,			*
397.	Ridgway Borough,			*
398.	Ridley Water Company (supply from New Chester Water Company),			*
399.	Rimersburg Borough,	*		*
400.	Ringtown Spring Water Company,	*		
401.	Riverton Consolidated Water Company,			*
402.	Roaring Creek Water Company,			*
403.	Rochester, J. H. (Marion Center Water Company, uninc.),		*	
404.	Rochester and Pittsburgh Coal and Iron Company (Rayne Township, Indiana County),			*
405.	Rochester and Pittsburgh Coal and Iron Company (Young Township, Indiana County),			*
406.	Rock Hill Water Company,	*		
407.	Roselawn Water Company,	*		
408.	Roulete Water Company,		*	*
409.	Rouzerville Water Company,	*		*
410.	Rural Valley Borough,	*		
411.	Rutherford Heights Water Supply Company (supply from Hummelstown Water Supply Company),			*
412.	Saegerstown Borough,	*		*6
413.	Saint Marys Water Company,	*		*
414.	Salladasburg Water Company (same source as Jersey Shore Water Company),			*
415.	Sand Spring Water Company of Meyersdale,	*		*

SOURCES OF SUPPLY OF WATER WORKS SYSTEMS WHICH HAVE BEEN THE SUBJECTS OF PERMITS OR DECREES, 1905-1915—Continued.

	Water Works Owner.	Sources.		
		Wells.	Springs.	Surface.
416.	Sankertown Borough,	*		
417.	Schuylkill County Almshouse and Insane Asylum (North Manheim Township, Schuylkill County),	*		*
418.	Schuylkill Haven Gas and Water Company,			*
419.	Scranton Gas and Water Company,			*
420.	Seitz, D. S., and F. C. Sites (East Pennsboro Township, Cumberland County),	*		
421.	Sellersville Borough,	*	*	*
422.	Sewickley Borough,			*
423.	Sewickley Water Company,	*		*
424.	Sharon Water Works Company,			*
425.	Shaver Bros. (Shavertown),	*		*
426.	Shawnee Water Supply Company,		*	
427.	Sheffield Water Company,			*
428.	Shinglehouse Water Company,	*	*	
429.	Shippensburg Borough,			*
430.	Shippenville Borough,		*	
431.	Shiremanstown Water Company,			*
432.	Shrewsbury Borough,	*	*	*7
433.	Silver Creek Water Company (part of supply from Crystal Water Company, including springs which are auxiliary),		*1	*
434.	Sinking Spring Water Company,		*	*
435.	Sligo Borough,	*		
436.	Slippery Rock Borough,	*		
437.	Smethport Water Company,	*		*
438.	Snably, W. A. (Benson),		*	
439.	Somerset Borough,	*		
440.	Somerset County Home (Somerset Township, Somerset County),	*	*	
441.	Souderton Borough,	*	*	
442.	South Allentown Borough,	*		
443.	South Annville Water Supply Company (supply from Lebanon Valley Consolidated Water Supply Company),			*
444.	South Bradford Borough,		*	
445.	South Easton Water Company,	*	*	
446.	South Fork Water Company,			*
447.	South Heights Borough,	*		
448.	South Pittsburgh Water Company,			*
449.	South Renovo Borough,			*
450.	South Strabane Water Company (from Citizens Water Company of Washington),			*
451.	Spring Brook Water Supply Company,			*
452.	Springdale Borough,	*		*
453.	Springdale Water Company,	*		
454.	Springfield Consolidated Water Company,			*
455.	Springfield Water Company,			*
456.	Spring Water Company of Kane,	*	*	*
457.	State Asylum for Chronic Insane (Wernersville),			*
458.	State College Water Company (well supply is auxiliary and obtained from the college),	*1		*
459.	State Hospital for the Insane, near Danville,			*
460.	State Institution for Feeble-Minded for Western Pennsylvania (Polk),		*	*
461.	Steelton Borough,			*
462.	Stone, Raymond D. (Bridgeton village, Bridgeton Township, Bucks County),		*	
463.	Stonehill Water Company (Rouseville),	*	*	
464.	Stoyestown Water Company,	*		
465.	Stroudsburg Water Supply Company,		*	*
466.	Suburban Water Company of Allegheny County,			*
467.	Summit Water Supply Company (Summerhill Township, Cambria County),			*
468.	Summit Water Supply Company (Lilly Borough),			*
469.	Summit Hill Water Company,	*	*	*
470.	Sunbury Water Company,			*
471.	Susquehanna Township Water Company (supply from Rutherford Heights Water Supply Company),			*
472.	Sykesville Borough,	*		
473.	Tamaqua Borough,			*
474.	Tarentum Borough,			*
475.	Tarentum Water Company,			*
476.	Telford Water Company,	*		
477.	Three Springs Water Company,		*	
478.	Tioga Water Works Company,	*		*
479.	Towanda Water Works,	*	*	*
480.	Tremont Water and Gas Company,		*	*

SOURCES OF SUPPLY OF WATER WORKS SYSTEMS WHICH HAVE BEEN THE SUBJECTS OF PERMITS OR DECREES, 1905-1915—Continued.

	Water Works Owner.	Sources.		
		Wells.	Springs.	Surface.
481.	Trevorton Water Supply Company,		*	
482.	Trevose Manor Spring Water Company,		*	
483.	Trotter Water Company,			*
484.	Trout Run Water Company,	*	*	*
485.	Troy Borough,	*	*	*
486.	Union Water Company (supply from Beaver Valley Water Company),			*
487.	Uniontown Water Company,			*
488.	Unionville Borough,		*	
489.	University Water Company (auxiliary supply from State College Water Company),	*1		*
490.	Unity Water Company (supply from Suburban Water Company of Allegheny County),			*
491.	Upper Gwynedd Water Company (from North Wales Water Company),	*		
492.	Upper Mauch Chunk Water Company,		*	*
493.	Valley Forge Park Commission (supply from Springfield Consolidated Water Company),			*
494.	Valley Water Company of Rochester (supply from Beaver Valley Water Company),			*
495.	Venango Oil and Land Company (Sugar Creek Township, Venango County),		*	
496.	Vesta Coal Company (Point View Village, East Bethlehem Township, Washington County),	*	*	*
497.	Wampum Borough,	*		
498.	Warren Water Company,			*
499.	Washington Water Supply Company,			*
500.	Waterford Water Company,		*	
501.	Waymart Water Company,		*	*
502.	Waynesboro Water Company,			*
503.	Waynesburg Water Company,			*
504.	Weatherly Water Company,			*
505.	Weldon Water Company (from Moreland Spring Water Company),	*	*	*
506.	Wellsboro Water Company,	*	*	*
507.	West Berwick Water Supply Company,		*	*
508.	West Chester Borough,			*
509.	West Conshohocken Water Company,		*	*
510.	Westfield Borough,	*	*	
511.	West Houtzdale Water Company,	*		*
512.	Westmoreland-Connellsville Coal and Coke Company,	*		
513.	Westmoreland Water Company (auxiliary supply from Mountain Water Supply Company),		*	*
514.	Westmoreland Water Company (Derry district),			*
515.	West Norriton Water Company (supply from Norristown Insurance and Water Company),			*
516.	West Pittsburgh Water Company,			*
517.	West Reading Water Company,			*
518.	West Salem Water Supply Company,		*	*
519.	West Side Water Company (supply from Beaver Valley Water Company),			*
520.	Whitaker Water Company (supply from South Pittsburgh Water Company),			*
521.	Wickersham, H. W. (of the Thompsontown Water Company (unine.),	*	*	
522.	Williams, J. S. (Somerton),	*		
523.	Williamsburg Borough,		*	*
524.	Williamsport Water Company,	*1		*
525.	Windber Water and Power Company,			*
526.	Windsor Borough,		*	
527.	Windsor Water Company,	*		*
528.	Womelsdorf Consolidated Water Company,	*		*
529.	Wrightsville Water Supply Company,		*	*
530.	Wyalusing Water Company,			*
531.	Wyland, J. F. (Allison Park),	*		
532.	Wyoming Valley Water Supply Company (Blackwood Department),			*
533.	Wyoming Valley Water Supply Company (Hazleton Department),			*
534.	York County Consolidated Water Company,		*	*
535.	York Water Company,			*
536.	Youngsville Borough,	*		
537.	Zierdon, W. F. (Johnsonburg),	*		

1. Auxiliary.
2. Emergency.
3. Proposed.
4. Temporary emergency.
5. Not domestic.
6. Emergency, without permit.
7. For ram.
8. Mine shaft.

SUMMARY OF WATER WORKS SOURCES.

The different kinds and combinations of sources in use by the water works listed in the foregoing table are here summarized.

Wells Only		
71		
Wells and Springs		Wells and Surface
28		67
	Wells Springs and Surface	
	40	
Springs Only	Springs and Surface	Surface Only
54	58	219

Wells in whole or in part,	206
Springs in whole or in part,	180
Surface in whole or in part,	384

In six instances only do the surface waters come from natural bodies of water or lakes, namely, the Canawacta Water Supply Company, the Citizens Water Company (Canton), the Eagles Mere Water Company, Erie City, the Honesdale Consolidated Water Company and the Scranton Gas and Water Company.

WATER FILTER DESIGNS MADE THE SUBJECTS OF PERMITS OR DECREES.

One hundred and thirty-eight filter designs have been submitted to the Department and made the subjects of permits or decrees. Of these designs one hundred and eighteen have been for plants now in operation or under construction, ten are preliminary designs to be executed when financial arrangements are completed or after detailed or modified plans have been submitted for the further approval of the Department; eight are for plants not built; and two for plants which have been abondoned. These designs have applied to one hundred and twenty-one water works systems. The permits to the Beaver Valley Water Company cover two plants; those to the City of Reading, four plants; and those to the Springfield Companies, four. Two designs have been considered for Bristol, a proposed new plant and the plant later purchased by the borough from the old Bristol Water Company. Two designs have been considered for Coatsville, a pressure filter, approved as an emergency measure at the time of the typhoid fever outbreak in 1912, and final detailed plans approved by the Department for a new source and permanent filtration works Two designs have been considered for the water works systems consolidated into the Monessen Water Company (now known as the Tri-Cities Water Company), the original plant of the Charleroi Water Company, now abandoned, and the present plant of the Tri-Cities Water Company. Two designs have been considered for the Schuylkill Haven Gas and Water Company, the first having been disap-

proved. Two designs have been considered for Huntingdon, one for an emergency addition to the semi-slow fiilters and another consisting of general plans for mechanical gravity filters for which detailed plans are to be submitted and approved prior to construction. Two designs have been considered for the Muncy Water Supply Company and five for the City of Philadelphia. Two permits have been issued to the Citizens Water Company of Canton, one covering the rapid sand plant of the gravity type constructed before 1905 and one approving preliminary plans for slow sand filters.

In addition to the one hundred and twenty-one water works systems for which filter designs have been reviewed, twenty-two water works systems have received permits or decrees relative to furnishing filtered water from the plants of other systems and are entered in the following table, although not numberd:

WATER FILTER DESIGNS MADE THE SUBJECTS OF PERMITS AND DECREES.

Water Works Owner.	Type of Filter Plant.			
	Slow Sand.	Rapid Sand.		Miscellaneous.
		Gravity.	Pressure.	
1. Apollo Water Works Co.,	Built before 1905,			
2. Armstrong Water Co.,		Remodeled,		
3. Bangor Water Co.,		Preliminary plans,		
4. Beaver Creek Water Co.,		Built 1910 (later dismantled).		
5. Beaver Valley Water Co.,		Built before 1905 (2 plants).		
6. Berwick Water Co.,		Built 1914,		
7. Bethlehem City Water Co.,				Built before 1905, semi-slow.
8. Bethlehem Steel Co.,		Built 1912,		
9. Bloomsburg Water Co.,		Built 1913,		
10. Bristol Borough,		Not built,		
Plant purchased from Bristol Water Co.,		Built 1906,		
11. Brookville Water Co.,		Built 1912,		
Plant sold to borough.				
12. Brownsville Water Co.,		Under construction,		
13. Butler Water Co.,		Built before 1905,		
14. Cairnbrook Water Co.,			Disapproved and not built.	
15. California Water Co.,		Built 1914,		
16. Cambridge Springs Borough,		Built 1908,		
17. Carlisle Gas & Water Co.,		Built before 1905,		
Charleroi Water Co. (sold to Monessen Water Co.),				
18. Citizens Water Co. (Canton),	Preliminary plans,	Built before 1905,		
Citizens Water Co. of Cecil Township. (Supply from Citizens Water Co. of McDonald.)				
19. Citizens Water Co. of Kittanning. (Sold to Armstrong Water Co.)				Old crib, not used.
20. Citizens Water Co. of McDonald,		Built 1915,		
Citizens Water Co. of Mt. Pleasant Township. (Supply from Citizens Water Co. of McDonald.)				

WATER FILTER DESIGNS MADE THE SUBJECTS OF PERMITS AND DECREES—Continued.

Water Works Owner.	Type of Filter Plant.			
	Slow Sand.	Rapid Sand.		Miscellaneous.
		Gravity.	Pressure.	
21. Citizens Water Co. of New Bethlehem,		Addition,		
Citizens Water Co. of South Fayette Township. (Supply from Citizens Water Co. of McDonald.)				
22. City of New Castle Water Co.,		Addition,		
23. Clarion Water Co.,		Remodeled,		
24. Clear Springs Water Co.,		Built 1914,		
25. Clymer Water Co. of Indiana,		Built 1908,		
26. Coatesville Borough,	Under construction,		Emergency, built 1912,	
College Hill Borough Water Co. (Supply from Beaver Valley Water Co.)				
27. Conemaugh & Franklin Water Co.,		Preliminary plans,		
28. Connellsville Water Co.,		Remodeled,		
29. Consolidation Coal Co.,		Built 1914,		
30. Danville Borough,		Built 1965,		
31. Dauphin Consolidated Water Supply Co., Enola Division,		Built 1907,		
Donora Water Co. (Sold to Monessen Water Co.),				
32. Eaglesmere Water Co.,			Built 1910,	
33. Eastern Pennsylvania State Institution for Feeble-Minded and Epileptic, near Spring City. (Supply from Home Water Co. of Royersford.)		Built before 1905,		
34. East Greenville Borough,		Built 1913,		
35. Ellwood Water Co.,		Built 1910,		
36. Emlenton Water Co.,		Built 1915,		
37. Emporium Water Co.,		Preliminary plan,		
38. Erie City,		Built 1914,		
39. Evitts Creek Water Co.,		Built 1913,		
40. Falls Creek Borough,	Built 1911 without approval.			
Fallston Water Co. (Supply from Beaver Valley Water Co.)				
41. Franklin City. Plant purchased from Venango Water Co.,		Built 1908 and remodeled.		
Freedom Water Co. (Supply from Beaver Valley Water Co.)				

42. Freeport Water Works Co.,		Built 1909,		
43. Gettysburg Water Co.,		Rebuilt 1912,		
Gravel Hill Water Supply Co. (Supply from Lebanon Valley Consolidated Water Supply Co.)				
44. Greenville Water Co.,		Built 1914,		
45. Hanover & McSherrystown Water Co.,				Strainer.
46. Harrisburg City,		Built 1905,		
47. Haysville Water Co.,			Built 1914,	
48. Hershey Water Co.,		Built 1915,		
49. Home Water Co.,		Under construction,		
50. Hummelstown Consolidated Water Co.,		Built 1909,		
51. Huntingdon Water Supply Co.,		Preliminary plans,		Addition 1910, semi-slow.
Jefferson and Clearfield Coal and Iron Co.,		Built 1907,		
52. Jenkintown Water Co. (Supply from Moreland Spring Water Co.)				
53. Jersey Shore Water Co.,		Under construction,		
54. Kensington Water Co.,		Built 1913,		
Lancaster City—Supply filtered by—				
55. Lancaster Water Filtration Co.,				Built 1905, semi-slow.
56. Langhorne Spring Water Co.,		Built 1915,		
57. Latrobe Water Co.,		Built 1914,		
58. Lebanon Valley Consolidated Water Supply Co.,		Built 1911,		
59. Lehigh Water Co.,				Crib built before 1905.
60. McKeesport City,		Built 1908,		
Manheim Township Water Co. (Supply from Lancaster),				
61. Marianna Water Co.,		Built 1911,		
62. Masontown Borough,		Built 1911,		
63. Mechanicsburg Gas & Water Co.,		Built 1909,		
64. Media Borough,			Remodeled,	
65. Middletown & Swatara Consolidated Water Co.,		Built 1910,		
66. Midland Water Co.,		Built 1914,		
67. Monessen Water Co. (Now Tri-Cities Water Co.)		Original plant abandoned.		
Plant purchased from Charleroi Water Co.,		Additions in 1911 and 1913.		
68. Monongahela Valley Water Co.,			Built before 1905,	
69. Montgomery Water Co.,		Built 1912,		
Moore Water Co. (Supply from Suburban Water Co. of Allegheny Co.)				
70. Moreland Spring Water Co.,		Built 1910,		
71. Muncy Water Supply Co.,	Built 1914,			Strainer, not built.
72. Myerstown Water Co.,			Not built,	
73. Natrona Water Co.,		Built 1910,		
New Brighton Water Co. (Supply from Beaver Valley Water Co.)				
74. New Chester Water Co.,		Additions in 1908,		
75. New Oxford Borough,		Built 1914,		
76. Newport Home Water Co.,		Built 1908,		

WATER FILTER DESIGNS MADE THE SUBJECTS OF PERMITS AND DECREES—Continued.

Water Works Owner.	Type of Filter Plant.			
	Slow Sand.	Rapid Sand.		Miscellaneous.
		Gravity.	Pressure.	
77. Norristown Insurance & Water Co.,		Remodeled,		
North Annville Water Supply Co. (Supply from Lebanon Valley Consolidated Water Supply Co.)				
North Cornwall Water Supply Co. (Supply from Lebanon Valley Consolidated Water Supply Co.)				
78. North East Borough,			Built 1908,	
North Rochester Water Co. (Supply from Beaver Valley Water Co.)				
79. North Strabane Water Co.,		Built 1910. Addition 1911.		
Ogontz Water Co. (Supply from Moreland Spring Water Co.)				
80. Parker City Water Co.,		Built 1912,		
81. Pennsylvania Industrial Reformatory (near Huntingdon),			Built 1913 (not domestic supply).	
82. Pennsylvania Training School (Morganza),	Preliminary plans,			
83. Pennsylvania Water Co.,		Built 1910,		
84. Perkasie Water Supply Co.,		Built 1912,		
85. Philadelphia City,	2 built before 1905, 1 built 1906, 1 built 1907, 1 built 1911.			
86. Phoenixville Borough,		Built 1914,		
87. Pittsburgh City,	Addition 1909,			
88. Pittsburgh Coal Co.,		Built 1914,		
Port View Water Co. (Supply from Monongahela Valley Water Co.)				
89. Pottstown Gas & Water Co.,		Built 1909,		
90. Punxsutawney Water Co.,			Built 1910,	
91. Quarryville Water Co.,		Built 1912,		
92. Reading City,	2 built before 1905, 1 built 1911, 1 built 1913.			

93. Reading Suburban Water Co.,		Built 1915,		
Reserve Township, Allegheny Co. (Supply from Pittsburgh City.)				
94. Ridgway Borough,		Built 1908. Addition 1915.		
95. Riverton Consolidated Water Co.,		Built 1912,		
96. Schuylkill Haven Gas & Water Co.,		Not built,	Disapproved and not built.	
97. Scranton Gas & Water Co.,		Built 1910,		
98. Sharon Water Works Co.,		Built before 1905,		
South Annville Water Supply Co. (Supply from Lebanon Valley Consolidated Water Supply Co.)				
99. South Fork Water Co.,		Not built,		
100. South Pittsburgh Water Co.,		Built 1905,		
South Strabane Water Co. (Supply from Citizens Water Co. of Washington.)				
101. Springdale Borough,		Built 1914,		
102. Springfield Consolidated Water Co. also operates North Springfield Water Co.	Remodeled,	Remodeled,	Built 1910,	
103. Springfield Water Co.,			Remodeled,	
104. State Asylum for Chronic Insane of Pennsylvania, Wernersville.		Built 1911,		
105. State Hospital for the Insane (near Danville),		Addition 1909,		
106. State Institution for Feeble-Minded of Western Pennsylvania, Polk.		Preliminary plans,		
107. Steelton Borough,	Built 1908, with scrubbers.			
108. Suburban Water Co. of Allegheny Co., Pennsylvania,		Built 1915,		
109. Sunbury Water Co.,		Addition 1907,		
110. Tarentum Borough,		Built 1914,		
111. Tarentum Water Co. (Purchased in 1906 by Allegheny Valley Water Co.)		Built 1908,		
112. Troy Borough,	Preliminary plans.			
Union Water Co. (Supply from Beaver Valley Water Co.),				
Unity Water Co. (Supply from Suburban Water Co. of Allegheny Co., Pennsylvania.)				
Valley Forge Park Commissioners. (Supply from Springfield Consolidated Water Co.)				
Valley Water Co. of Rochester. (Supply from Beaver Valley Water Co.)				
Venango Water Co. (Purchased by Franklin City),				
113. Vesta Coal Co.,		Preliminary plan,		
114. Warren Water Co.,		Built 1905,		
115. Waynesburg Water Co.,		Remodeled,		
Weldon Water Co. (Supply from Moreland Spring Water Co.)				
116. West Conshohocken Water Co.,		Built 1913,		
West Norriton Water Co. (Supply from Norristown Insurance & Water Co.)				

WATER FILTER DESIGNS MADE THE SUBJECTS OF PERMITS AND DECREES—Continued.

Water Works Owner.	Type of Filter Plant.			
	Slow Sand.	Rapid Sand.		Miscellaneous.
		Gravity.	Pressure.	
117. West Pittsburgh Water Co.,		Built 1911,		
118. West Reading Water Co.,		Rebuilt 1914,		
West Side Water Co. (Supply from Beaver Valley Water Co.)				
119. Wrightsville Water Supply Co.,		Built 1914,		
120. York County Consolidation Water Co.,		Not built,		
121. York Water Co.,		Remodeled,		

SUMMARY OF WATER FILTER DESIGNS MADE THE SUBJECTS OF PERMITS OR DECREES.

	Type of Plant.						
		Rapid Sand.					
	Slow sand.	Gravity.	Pressure.	Semi-slow.	Crib only.	Strainers.	All types.
Old plants:							
Unchanged,	3	6	1	2	1	1	14
Extended,	6	8	1	1	0	0	16
Remodeled,	0	8	1	0	0	0	9
New plants,	7	65	7	0	0	0	79
Preliminary design,	3	7	0	0	0	0	10
Not built,	0	4	3	0	0	1	8
Abandoned,	0	1	0	0	1	0	2
Totals,	19	99	13	3	2	2	138

From the above table it appears that the mechanical or rapid type of filter predominates in favor and, further, that the inability of the old cribs and strainers to furnish a safe supply from polluted sources is being recognized. Under the heading "Strainers" are grouped crude filter designs, so called, which cannot be included in any of the generally recognized type groups. It should be noted that none of these crude types of design is shown in the above table for new construction. Moreover, there are no cribs among the new designs, although this form of construction was viewed with favor not many years ago as a protective measure in obtaining water supplied from surface streams.

SEWERAGE.

10. SEWERAGE AND SEWAGE TREATMENT PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH WITH THE AGREEMENT OF THE GOVERNOR AND THE ATTORNEY GENERAL.

The issuing of sewerage and sewage disposal permits and decrees has been done under the Act of the General Assembly approved April 22, 1905 (P. L. 260), as interpreted by the Governor of the State, the Attorney General and the Commissioner of Health, acting together under the law, or by the courts upon appeal. This law is a distinct departure in Pennsylvania State Medicine, in that it provides for State prevention of water-borne diseases. Formerly the powers committed by statute to the State Board of Health relative to regulations tending to limit the spread of infection by water carriage were advisory only. It was at all times within the sphere and duty of the board to recommend to local authorities, having the usual powers in matters relating to the preservation of public health, the adoption of effective sanitary and preventive regulations and measures in anticipation of possible future epidemics.

The policy of limiting the State health authorities to powers of an advisory character only, until the actual presence of an epidemic threatens everybody in the community, so vividly shown to be suicidal in the extreme by the memorable epidemic of 1903-04 at Butler, ceased with the enactment of the law of 1905. In the prosecution of the work under this new law, precedents have had to be established. It has been pioneer effort.

Sewage is defined in the act as "any substance that contains any of the waste products or excrementitious or other discharge from the bodies of human beings or animals." Slops and sink and wash water come within the meaning of the term. The prevailing idea that laundry water and drainage from bath-tubs is not sewage is gradually being dispelled; but not without some educational effort in making clear that such waters very frequently contain pathogenic poison, and that they are often discharged on the surface of the ground near springs and wells, or into street gutters, and thence to streams used below as sources of public water supply. Some manufacturing wastes are not sewage as above defined, but if a menace to public health they are subject to regulation at the discretion of the Commissioner of Health.

The law stipulates that no person, corporation or municipality shall place or permit to be placed or discharge or permit to flow into any of the waters of the State any sewage except as specially provided; but the Act does not apply to waters pumped or flowing from

coal mines or tanneries. Neither does it prevent the discharge of sewage from any public sewer system owned and maintained by the municipality, provided such sewer system was in operation and was discharging sewage into any State waters at the time of the passage of the act. The exception noted, however, does not permit the discharge of sewage from a sewer system extended subsequent to the passage of the Act. A copy of the law has been sent to every municipality.

Therefore it is understood that so long as a municipal sewer system in use before April 22, 1905, be not extended, the law is not applicable and the sewage therefrom may continue to defile the public water supply. What constitutes an extension has been the subject of considerable contention by local officials. A sewer system must, in the course of events, be extended. Department officers and agents have been instructed that evidently the intent of the law is to bring, as soon as possible, all municipal sewer systems under State regulation and control, to the end that the purifying of the waters of the State for the protection of the public health shall be accomplished.

Unapproved sewer extensions to an existing sewer outlet whereby the volume of filth discharged into a stream is increased would defeat the object of the law and be contrary to the letter thereof. It is understood that the State officials have determined that it is the principle involved which shall control and not the length of the sewer extension.

The law further provides that upon application duly made to the Commissioner of Health by public authorities having by law charge of a sewer system of any municipality, the Governor, Attorney General and Commissioner of Health shall consider the case and whenever it is their unanimous opinion that the general interests of the public health would be subserved thereby, the Commissioner of Health may issue a permit for the discharge of sewage from such public sewer system into any of the waters of the State, and may stipulate in the permit the conditions on which discharge will be permitted. The permit before being operative must be recorded in the office of the Recorder of Deeds for the county wherein the outlet for the sewer system is located.

As understood, the policy inaugurated is to bring about the abandonment of streams as carriers of raw sewage. All sewage must finally cease to be discharged, untreated, into any waters used subsequently for drinking purposes.

It also appears by what follows that a town should avoid the making of a petition every time a petty sewer extension is contemplated, by the submission in the first instance of a general application for sewer extension, invovling the question once for all of State policy for that particular municipality. State approval under these

circumstances implies careful consideration of all the problems involved. The principal one relates to the disposition of the sewage.

A private corporation, duly chartered by the State, and enfranchised by local authorities to construct, operate and maintain a public sewer system, according to an opinion of Attorney General Carson, is to be classed with the municipal corporations to the extent that plans must be filed and extensions approved. All other private corporations and companies and individuals that at the time of the passage of the act were discharging sewage into any of the waters of the State may continue such discharge unless otherwise ordered. In the borough the remedy for the sources of pollution may be connection with a public sewerage system.

The student of the permits may note that one feature is based on the proposition that it is not practicable to treat large volumes of mingled sewage and storm water, owing to the prohibitive cost. It is really always more economical and better to build separate sewers for sanitary household drainage and to provide other channels for the removal of rain-water.

Another feature is based on the proposition that efficiency and economy in preserving the purity of the streams for the public protection dictates that sewers shall be built to conform to a comprehensive plan. It is now generally recognized that patchwork methods are bound to cause trouble, expensive alterations and repairs, and that those towns which have employed competent consulting engineers to lay out comprehensive systems, and have thereafter conformed to the plan in construction, have usually found such a course to be profitable.

SEWERAGE AND SEWAGE TREATMENT PERMITS AND DECREES ISSUED DURING 1915.

During the year, 123 sewerage permits and decrees have been issued, and it should be noted that as in the case of water works every permit is a decree, but every decree is not a permit. They are classified below. Seventy-eight permits and decrees relate to the temporary discharge of sewage untreated or partially treated into State waters, and twelve of these also approve plans for sewage treatment works. Twenty-seven approvals of sewage treatment plans were issued without any accompanying authorization for the temporary discharge of crude sewage. Two decrees reject sewerage plans or withhold approval thereof until sewage treatment plans are pre-

pared. Five decrees require the preparation of sewage treatment plans to be taken up at once, and be presented for approval on or before a specified date.

The names of the recipients of these permits are given below in lists grouped as indicated. In addition eleven permits and decrees which do not lend themselves to the above classification were issued as follows:

A permit was issued to Sellersville approving plans for a comprehensive sewerage system to discharge into the privately owned and operated plant now treating the sewage of Perkasie.

A permit to Brackenridge approving plans for intercepting sewers to deliver the sewage to the interceptor and sewage treatment plant of Tarentum decreed that the sewers should not be used until such connection was completed.

A permit to Union City approving modifications of its comprehensive sewerage plan decreed that the town's new intercepting sewer and branches should not be used for the discharge of sewage prior to the completion of at least part of the sewage treatment works, as provided for in previous permits.

A permit to Upper Darby Township, Delaware County, approving a sewage treatment site for Darby Creek district, decrees that the plans shall be approved and the works built before any sewage is discharged.

A permit to Old Forge authorizes the construction of a comprehensive sewer system in a section of the borough, but withholds permission for the discharge of sewage pending the compliance with previous decrees.

Permits were issued, one to Washington, two to East Washington, one to Homoeopathic State Hospital for the Insane, Hanover Township, Lehigh County, and two to West Chester, approving extensions to existing sewers discharging into sewage treatment plants built in accordance with plans approved by the Department.

The seventy-eight permits and decrees relative to the temporary discharge of sewage untreated or partially treated into State waters require the preparation and submission to the State Department of Health for approval of plans for the treatment of the sewage either within the duration of the permit or upon the order of the State Department of Health, whenever in its opinion the interests of public health shall make necessary the preparation of such plans in order that the works may be executed and the sewerage system made to conform thereto, in time to keep pace with the advance of standards of sanitation and changing conditions. Exception is made in the case of those places for which sewage treatment plans have already

been approved. Of these seventy-eight temporary permits and decrees,

Nine permits expire within six months, namely, those issued to:

1. Barnesboro.
2. Coatesville.
3. Greenville (relocaion of units).
4. Juniata.
5. Old Forge.
6. Smethport.
7. Titusville.
8. York.
9. York (3rd permit).

Thirty-six permits expire within one year, namely, those issued to:

1. Ben Avon.
2. Butler.
3. Dale.
4. Danville.
5. Ebensburg.
6. Ferndale.
7. Gaysport.
8. Greensburg.
9. Hughestown.
10. Johnsonburg.
11. Johnstown.
12. Kane.
13. Milton.
14. Miners Mills.
15. Monongahela City.
16. Philadelphia (9 permits).
17. Punxsutawney.
18. Ridley Township.
19. St. Marys.
20. Southwest Greensburg.
21. Steelton.
22. Throop.
23. Vandergrift.
24. West End.
25. Westfield.
26. York (1st permit).
27. Youngwood.
28. Youngsville.

Eighteen permits expire within two years, namely, those issued to:

1. Canonsburg.
2. Duquesne.
3. Emsworth.
4. Exeter.
5. Freeport.
6. Hastings.
7. Johnstown.
8. Lilly.
9. Lykens.
10. Marcus Hook.
11. Pittston.
12. South Brownsville.
13. South Connellsville.
14. South Fork.
15. Turtle Creek.
16. West Pittston.
17. Wilkes-Barre.
18. Wilmerding.

One permit expires within three years, namely, that issued to:

1. Beaver Falls.

Thirteen permits are for the temporary discharge of sewage pending the further orders of the Department, namely those issued to:

1. Etna.
2. Lancaster Development Company (discharging into sewers of Lancaster City).
3. H. M. McClure (Selinsgrove).
4. Pittsburgh.
5. Philadelphia (9 permits).

One decree of advice relates to the temporary discharge of untreated sewage from a private sewer system for which temporary permit may not be issued within the law. This decree was adressed to:

1. Susquehanna Coal Company, Mt. Carmel Township, Northumberland County.

Twenty-seven permits and decrees approving plans for sewage treatment works, but not including temporary permission to discharge untreated sewage, were issued to the following:

1. Bellwood.
2. Birdsboro Steel Foundry and Machine Company.
3. Bradford County Home, West Burlington Township, Bradford County.
4. Bradford County Home, West Burlington Township, Bradford County (2nd permit).
5. Carbondale Machine Company, Fell Township, Lackawanna County.
6. Cheltenham Township, Montgomery County.
7. Cheyney Training School for Teachers, Thornbury Township, Delaware County.
8. Cramer Realty Company, South Abington Township, Lackawanna County.
9. Cressman, Philip (extension of Perkasie plant to serve Sellersville).
10. Dormont (extensions).
11. Downingtown.
12. Galen Mountain Company, South Heidelberg Township, Berks County.
13. Glen Mills Schools, Boys' Department, Thornbury Township, Delaware County.
14. Glen Mills Schools, Girls' Department, Middletown Township, Delaware County.
15. Glenruadh Village, Mill Creek Township, Erie County.
16. Luzerne County Industrial School for Boys, Kis-Lyn (P. O.), Butler Township, Luzerne County.
17. Masonic Homes of Pennsylvania, West Donegal Township, Lancaster County.
18. Monarch Park Hotel Company, Cranberry Township, Venango County.
19. North East.
20. Pittsburgh Coal Company, Montory Village No. 2, Cecil Township, Washington County.
21. Pittsburgh Coal Company, Montour Village No. 4, Cecil Township, Washington County.
22. Pittsburgh Coal Company, Montour Village No. 1, Mt. Pleasant Township, Washington County.
23. Plains Township, Luzerne County (Hudson Village School).
24. Reading (extensions).
25. Slippery Rock State Normal School, Slippery Rock, Butler County.
26. State College.
27. Washington (improvements to sludge bed).

Numbers one, two, five, six, nine, ten, twelve, fourteen, twenty-two and twenty-three of the above permits and decrees require modifications of the sewage treatment plans to be re-submitted for final approval:

The twelve permits approving plans for sewage treatment works as well as granting permission for the temporary discharge of untreated sewage were issued to the following:

1. Canonsburg.
2. Coatesville (disinfection).
3. Ebensburg.
4. Freeport.
5. Greenville.
6. Johnsonburg.
7. Johnstown.
8. Juniata (treatment in Altoona's plant).
9. Philadelphia.
10. South Brownsville.
11. Westfield.
12. York.

Numbers two, three, four, eight, nine, ten and twelve of the above permits and decrees require modifications of the sewage treatment plans to be re-submitted for final approval.

The two decrees rejecting or withholding approval of sewer plans were issued to:

1. Middleburg.
2. Stoney Creek Township, Cambria County.

The five decrees requiring the immediate preparation of plans for sewage treatment works were issued to:

1. Brookville.
2. Eldred.
3. Marion Heights.
4. Scranton.
5. Tyrone.

EXPLANATION OF THE TABLE OF ALL SEWERAGE PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH UP TO DECEMBER 31, 1915.

There have been ten hundred and twenty-four sewerage and sewage disposal permits and decrees issued since the creation of the State Department of Health, several for the same place in a number of instances. The places served comprise 415 municipalities, cities, boroughs and townships, numbered consecutively in alphabetical order in the first column of the following table. Where the recipients are the municipalities, they are followed by consecutive numbers in the narrow second column headed "Numbering of Municipal Owners." Where the recipients are private corporations, individuals or institutions, their names are given in the third column opposite the municipalities in which they are located. These private parties are also entered in this column alphabetically, with consecutive numbers and with cross references, opposite in the first column to the municipalities. The permits and decrees, and years of issue, are indicated opposite the alphabetical entries. A few post offices, stations and popular names are also entered alphabetically in the first column, without numbers, to facilitate reference.

SEWERAGE AND SEWAGE DISPOSAL PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH WITH THE AGREEMENT OF THE GOVERNOR AND THE ATTORNEY GENERAL, AND PLACES SERVED, 1905-1915—Continued.

PLACES SERVED.		RECIPIENTS OF PERMITS AND DECREES.		Permits and decrees by years opposite numbered entries of recipients.										
Numbering of municipalities.	Municipalities numbered alphabetically; and again entered opposite alphabetical entries of non-municipal recipients; also some post offices and villages.	Numbering of municipal owners.	Private corporations, individuals and institutions, numbered alphabetically; and again entered opposite alphabetical entries of places served.	1905 & 1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	Total
	Total,			51	86	129	114	111	80	119	169	102	123	1,024
1	Abington Township, Montgomery Co.,		Seybert Institution,											
2	Aldan, Delaware Co.,	1								1				1
3	Aliquippa, Beaver Co.,	2			2			1						3
	O'Hara Township, Allegheny Co.,		1 Allegheny City Home, now known as North Side City Home.		1	1								2
	Collier Township, Allegheny Co.,		2 Allegheny County Home & Hosp. for the Insane.						1					1
	O'Hara Township, Allegheny Co.,		3 Allegheny County Work House,		1									1
4	Allentown, Lehigh Co.,	3				1								1
5	Altoona, Blair Co.,	4									1			1
	Lower Merion Township, Montgomery Co.,		4 American Bridge Co., Pencoyd P. O.,									1		1
	Carroll Township, Washington Co.,		5 American Steel & Wire Co., Donora,					1						1
	Smith Township, Washington Co.,		6 American Zinc & Chemical Co., Langloth Village.									1		1
6	Archbald, Lackawanna Co.,	5										1		1
7	Arnold, Westmoreland Co.,	6									1	1		2

SEWERAGE AND SEWAGE DISPOSAL PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH WITH THE AGREEMENT OF THE GOVERNOR AND THE ATTORNEY GENERAL, AND PLACES SERVED, 1905-1915—Continued.

PLACES SERVED.		RECIPIENTS OF PERMITS AND DECREES.		Permits and decrees by years opposite numbered entries of recipients.										
Numbering of municipalities.	Municipalities numbered alphabetically; and again entered opposite alphabetical entries of non-municipal recipients; also some post offices and villages.	Numbering of municipal owners.	Private corporations, individuals and institutions, numbered alphabetically; and again entered opposite alphabetical entries of places served.	1905 & 1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	Total
	Ashley, Luzerne Co.,	7								1				1
	O'Hara Township, Allegheny Co.,		7 Aspinwall-Delafield Company,	1										1
	Athens, Bradford Co.,	8								1	1			2
9	Avalon, Allegheny Co.,	9									1	1		2
11	Avoca, Luzerne Co.,	10					1							1
12	Baden, Beaver Co.,	11			1									1
13	Baldwin Township, Allegheny Co.,		West Liberty Improvement Co.,											
14	Barnesboro, Cambria Co.,	12				1							1	2
15	Barrett Township, Monroe Co.,		Buck Hill Falls Company,											
16	Bath, Northampton Co.,	13						1						1
17	Beaver, Beaver Co.,	14				1								1
18	Beaver Falls, Beaver Co.,	15					1			2	2		1	6
19	Bedford, Bedford Co.,	16			1		1				1			3
	Haverford Township, Delaware Co.,		8 Beechwood Park Amusement Co. (Project abandoned.)			1								1
20	Bellefonte, Centre Co.,	17				1								1
21	Bellevernon, Fayette Co.,	18						1						1

22	Bellevue, Allegheny Co.,	19					1		1				2
23	Bellwood, Blair Co.,	20										1	1
24	Ben Avon, Allegheny Co.,	21			1							1	2
	Kilbuck Township, Allegheny Co.,		9 Ben Avon Heights Sewer Co.,					1					1
25	Bensalem Township, Bucks Co.,		St. Francis Industrial School, Eddington,										
	Heidelberg Township, Berks Co.,		10 Bethany Orphans Home,					1					1
26	Big Beaver Township, Beaver Co.,		Koppel Land Co.,										
27	Big Run, Jefferson Co.,	22			1								1
28	Birdsboro, Berks Co.,		11 Birdsboro Steel Foundry and Machine Co.,									1	1
29	Blairsville, Indiana Co.,	23			1		1			1			3
30	Blakely, Lackawanna Co.,	24		1			1						2
	O'Hara Township, Allegheny Co.,		12 Blaw Steel Centering Co.,						1				1
31	Bloomsbug, Columbia Co.,	25		1									1
32	Brackenridge, Allegheny Co.,	26			2	1					1	1	5
33	Braddock Township, Allegheny Co.,		East Wilkinsburg Improvement Co.,										
34	Bradford, McKean Co.,	27			1				1		1		3
	West Burlington Township, Bradford Co.,		13 Bradford County Commissioners,									2	2
35	Bristol, Bucks Co.,	28			1				1		1		3
	East Stroudsburg, Monroe Co.,		14 Brittain, A. R., et al.,						1				1
36	Brookville, Jefferson Co.,	29										1	1
37	Brownsville, Fayette Co.,	30						1		1	1		3
	Moreland Township, Montgomery Co.,		15 Bryn Athyn Village Association,			2							2
	Barrett Township, Monroe Co.,		16 Buck Hill Falls Company,							1		1	2
	Upper Darby Township, Delaware Co.,		17 Burn Brae Hospital,									1	1
38	Burrell Township, Indiana Co.,		Josephine Furnace & Coke Company,										

SEWERAGE AND SEWAGE DISPOSAL PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH WITH THE AGREEMENT OF THE GOVERNOR AND THE ATTORNEY GENERAL, AND PLACES SERVED, 1905-1915—Continued.

PLACES SERVED.		RECIPIENTS OF PERMITS AND DECREES.		Permits and decrees by years opposite numbered entries of recipients.										
Numbering of municipalities.	Municipalities numbered alphabetically; and again entered opposite alphabetical entries of non-municipal recipients; also some post offices and villages.	Numbering of municipal owners.	Private corporations, individuals and institutions, numbered alphabetically; and again entered opposite alphabetical entries of places served.	1905 & 1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	Total
39	Butler, Butler Co.,	31			1					2			1	4
40	Butler Township, Butler Co.,		18 Butler-Highfields Land and Improvement Company.								1			1
41	Butler Township, Luzerne Co.,		Luzerne County Industrial School for Boys, Kis-Lyn.											
42	California, Washington Co.,	32				1						1		2
43	Cambridge Springs, Crawford Co.,	33			1	2	1				1	1		6
44	Canaan Township, Wayne Co.,		State Hosp. for Criminal Insane, Farview Station.											
45	Canonsburg, Washington Co. (*2 permits in 1908 to S. Canonsburg, annexed in 1911).	34				*3						1	1	5
46	Canton, Bradford Co.,	35			1						1			2
	Fell Township, Lackawanna Co.,	36					2	1			1			4
47	Carbondale, Lackawanna Co.,		19 Carbondale Machine Company,										1	1
48	Carbondale Township, Lackawanna Co.,		Mayfield Yards (Citizens),											
49	Carlisle, Cumberland Co.,	37			2									2
50	Carmichaels, Greene Co.,	38						1						1
51	Carrick, Allegheny Co.,	39		1		1								2

52	Carrolltown, Cambria Co.,												
53	Carroll Township, Washington Co.,												
54	Catawissa, Columbia Co.,												
55	Cecil Township, Washington Co.,												
	Cecil Township, Washington Co.,												
	Cecil Township, Washington Co.,												
56	Chambersburg, Franklin Co.,												
57	Chapman Township, Clinton Co.,												
58	Charleroi, Washington Co.,												
59	Chartiers Township, Allegheny Co.,												
60	Cheltenham Township, Montgomery Co.,												
61	Chester, Delaware Co.,												
	West Bradford Township, Chester Co.,												
	West Pikeland Township, Chester Co.,												
62	Cheswick, Allegheny Co.,												
	Thornbury Township, Delaware Co.,												
63	Clairton, Allegheny Co.,												
64	Claysville, Washington Co.,												
65	Clearfield, Clearfield Co.,												
66	Clifton Heights, Delaware Co.,												
67	Clintonville, Venango Co.,												
68	Coaldale, Schuylkill Co.,												
69	Contesville, Chester Co.,												
70	College Hill, Beaver Co.,												
	College Hill, Beaver Co.,												
40										1			1
	American Steel & Wire Co., Donora,												
41										1			1
	Penna. Training School, Morganza,												
	Pittsburgh Coal Co., Montour Vil., No. 2,												
	Pittsburgh Coal Co., Montour Vil., No. 4,												
42			1				1						2
	Drocton Land Co., Renovo,												
43						1			1				2
44			2										2
45											1		1
46				1		1							2
	20 Chester County Home & Hos. for the Insane,							1					1
	21 Chester Springs Soldiers' Orphans' School,				1								1
47				3		2		1					6
	22 Cheyney Training School for Teachers,										1		1
48							1						1
49									1				1
50					1	1				1			3
51									1				1
52				1									1
53			1	1									2
54								1		1	1		3
55					1			1					2
	Whiteside, Robert A.,												

SEWERAGE AND SEWAGE DISPOSAL PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH WITH THE AGREEMENT OF THE GOVERNOR AND THE ATTORNEY GENERAL, AND PLACES SERVED, 1905-1915—Continued.

PLACES SERVED.		RECIPIENTS OF PERMITS AND DECREES.		Permits and decrees by years opposite numbered entries of recipients.										
Numbering of municipalities.	Municipalities numbered alphabetically; and again entered opposite alphabetical entries of non-municipal recipients; also some post offices and villages.	Numbering of municipal owners.	Private corporations, individuals and institutions, numbered alphabetically; and again entered opposite alphabetical entries of places served.	1905 & 1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	Total
71	Collier Township, Allegheny Co.,		Allegheny Co. Home & Hosp. for the Insane.											
	Collier Township, Allegheny Co.,		23 Collier Land Co.,								1	1		2
72	Collingdale, Delaware Co.,	56								2	1			3
73	Columbia, Lancaster Co.,	57			1	1								2
74	Columbus Township, Warren Co.,		Howard, J. W. & A. P., & Co., Ltd., Corry.											
75	Colwyn, Delaware Co.,	58				1		1			1			3
76	Conewango Township, Warren Co.,		State Hospital for Insane, Warren,											
77	Connellsville, Fayette Co.,	59				1	1					1		3
78	Coraopolis, Allegheny Co.,	60			1						1	1		3
79	Corry, Erie Co.	61				1		1		1	1			4
	Corry, Erie Co. (vicinity),		Howard, J. W. & A. P., & Co., Ltd., Columbus Twp. (Warren Co.)											
80	Coudersport, Potter Co.,	62						1			1			2
81	Crafton, Allegheny Co.,	63							1					1
	South Abington Township, Lackawanna Co.,		24 Cramer Realty Co., Lansdowne Park Village,									1	1	2
82	Cranberry Township, Venango Co.,		Monarch Park Hotel Co.,											

	Perkasie, Bucks Co.,		25 Cressman, Philip,				3					1	4
83	Cresson, Cambria Co.,	64			1								1
84	Dale, Cambria Co.,	65										1	1
85	Danville, Montour Co.,	66				2		1	2			1	6
	Danville, Montour Co. (vicinity),		State Hospital for the Insane, Mahoning Township.										
86	Darby, Delaware Co.,	67				1		1			1		3
	Darling P. O.,		Glen Mills Schools, Girls' Department,										
87	Dayton, Armstrong Co.,	68								1			1
	Middletown Township, Delaware Co.,		26 Delaware County House of Employment,								1		1
	Dormont, Allegheny Co.,		27 Delmont Land Co. (Permit 1909.) (In part of Scott Township. Annexed later to Dormont in 1909.)				*						*
	Springfield Township, Delaware Co.,		28 Dermady Sanatorium (near Morton),	1									1
88	Derry, Westmoreland Co.,	69			1	2							3
	Easttown Township, Chester Co.,		29 Devon (Citizens),			1							1
89	Dickson City (Borough, Lackawanna Co.),	70				1					1		2
	Dixmont, Allegheny Co.,		West. Penna. Hosp. for the Insane (Kilbuck Township).										
90	Donora, Washington Co.,	71					1			1			2
	Donora, Washington Co. (vicinity),		American Steel & Wire Co. (Carroll Township).										
91	Dormont, Allegheny Co.,	72	Delmont Land Co. (Permit 1909). (Annxd. later in 1909 to Dormont).				*1	2				1	4
92	Dorranceton, Luzerne Co.,	73				1			1				2
93	Downingtown, Chester Co.,	74										1	1
94	Doylestown, Bucks Co.,		30 Doylestown Sewerage Company,				1	1					2
	Chapman Township, Clinton Co.,		31 Drocton Land Company, Renovo,	1									1

SEWERAGE AND SEWAGE DISPOSAL PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH WITH THE AGREEMENT OF THE GOVERNOR AND THE ATTORNEY GENERAL, AND PLACES SERVED, 1905-1915—Continued.

PLACES SERVED.		RECIPIENTS OF PERMITS AND DECREES.		Permits and decrees by years opposite numbered entries of recipients.										
Numbering of municipalities.	Municipalities numbered alphabetically; and again entered opposite alphabetical entries of non-municipal recipients; also some post offices and villages.	Numbering of municipal owners.	Private corporations, individuals and institutions, numbered alphabetically; and again entered opposite alphabetical entries of places served.	1905 & 1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	Total
95	DuBois, Clearfield Co.,	75					1							1
96	Dunmore, Lackawanna Co.,	76			1									1
97	Duquesne, Allegheny Co.,	77									1		1	2
98	Duryea, Luzerne Co.,	78								2		1		3
	Scott Township, Allegheny Co.,		32 Dysart, A. P.,			1								1
99	Eagles Mere, Sullivan Co.,	79				1								1
	Eaglesville, P. O.,		Phila. Jewish Sanatorium (L. Providence Township).											
100	East Bethlehem Township, Washington Co.,		Vesta Coal Co.,											
101	East Brady, Clarion Co.,	80		1										1
	Sunbury, Northumberland Co.,		33 East End Sewer Co.,	1					1					2
	East Vincent Township, Chester Co.,		34 East. Penna. State Inst. for Feeble-Minded and Epileptic, near Spring City.	1						1				2
102	East Fallowfield Township, Chester Co.,		Megargee Paper Mills,											
103	East Lansdowne, Delaware Co.,	81								1	1			2
104	East McKeesport, Allegheny Co.,	82			1					1	1			3
105	East Mauch Chunk, Carbon Co.,	83			1									1

106	Easton, Northumberland Co.,	84		1			1	2					4
107	East Stroudsburg, Monroe Co.,	85				1							1
	East Stroudsburg, Monroe Co.,		Brittain, A. R., et al.,										
108	Easttown Township, Chester Co.,		Devon (Citizens),										
109	East Vincent Township, Chester Co.,		East. Penna. State Inst. for F. M. & F., near Spring City.										
110	East Washington, Washington Co. *Permit jointly with Washington.	86						*				2	2
	Braddock and Wilkins Townships, Allegheny Co		35 East Wilkinsburg Improvement Co.,					1					1
111	Ebensburg, Cambria Co.,	87										1	1
	Eddington P. O.,		St. Francis Ind. School (Bensalem Township).										
112	Eddystone, Delaware Co.,	88							1				1
113	Edgeworth, Allegheny Co.,	89		1	1						1		3
114	Edinboro, Erie Co. *Permits jointly to borough and Northwestern State Normal School.	90			1				1	*2			4
115	Edwardsville, Luzerne Co.,	91				1			1	2	1		5
116	Eldred, McKean Co.,	92										1	1
117	Elizabethville, Dauphin Co.,	93								1			1
	Lower Allen Township, Cumberland Co.,		36 Elkwood Sewerage Co., New Cumberland,						1				1
118	Ellwood City (borough), Lawrence Co.,	94			1	1							2
	Elwyn P. O.,		Penna. Training School for F. M. C. (Middletown Township).										
119	Emlenton, Venango Co.,	95				1							1
120	Emporium, Cameron Co.,	96		1				1					2
121	Emsworth, Allegheny Co.,	97		1								1	2

SEWERAGE AND SEWAGE DISPOSAL PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH WITH THE AGREEMENT OF THE GOVERNOR AND THE ATTORNEY GENERAL, AND PLACES SERVED, 1905-1915—Continued.

PLACES SERVED.		RECIPIENTS OF PERMITS AND DECREES.		Permits and decrees by years opposite numbered entries of recipients.										
Numbering of municipalities.	Municipalities numbered alphabetically; and again entered opposite alphabetical entries of non-municipal recipients; also some post offices and villages.	Numbering of municipal owners.	Private corporations, individuals and institutions, numbered alphabetically; and again entered opposite alphabetical entries of places served.	1905 & 1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	Total
122	Erie, Erie Co.,	98					1	1		1	1			4
	Mill Creek & Harbor Creek Townships, Erie Co.		37 Erie Improvement Company,			1			1	1				3
123	Etna, Allegheny Co.,	99					1			1			1	3
124	Evansburg, Butler Co. (Evans City P. O.),	100									1			1
125	Everson, Fayette Co.,	101							1	1				2
126	Exeter, Luzerne Co.,	102				1						2	1	4
127	Fairchance, Fayette Co.,	103				1								1
	Leet Township, Allegheny Co.,		38 Fair Oaks Land Company,			1								1
128	Farrell, Mercer Co. (formerly South Sharon),	104				1				1	1			3
	Farview Station, Wayne Co.,		State Hosp. for Criminal Insane (Canaan Township).											
129	Fell Township, Lackawanna Co.,		Carbondale Machine Co.,										1	1
130	Ferndale, Cambria Co.,	105												
131	Ford City (borough), Armstrong Co.,	106			2									2
132	Forest City (borough), Susquehanna Co.,	107			1	1								2
133	Forty Fort, Luzerne Co.,	108								1				1
134	Franklin, Venango Co.,	109				1	1			1				3

135	Freeport, Armstrong Co.,												
	South Heidelberg Township, Berks Co.,												
136	Gallitzin, Cambria Co.,												
137	Gaysport, Blair Co.,												
138	Gilberton, Schuylkill Co.,												
139	Glassport, Allegheny Co.,												
	Thornbury Township, Delaware Co.,												
	Middletown Township, Delaware Co.,												
140	Glenolden, Delaware Co.,												
	Mill Creek Township, Erie Co.,												
	Norwich Township, McKean Co.,												
141	Greensburg, Westmoreland Co.,												
142	Green Tree, Allegheny Co.,												
143	Greenville, Mercer Co.,												
144	Grove City (borough), Mercer Co.,												
145	Hallstead, Susquehanna Co.,												
	State College, Centre Co.,												
	Upper Augusta Township, Northumberland Co.												
146	Hanover, York Co.,												
147	Hanover Township, Lehigh Co.,												
148	Hanover Township, Luzerne Co.,												
149	Harbor Creek Township, Erie Co.,												
110				1				1			1	3
	39 Galen Mountain Company,										1	1
111										1		1
112		1									1	2
113							1					1
114				1		1	1					3
	40 Glen Mills Schools, Boys' Dept., Glen Mills (formerly called House of Refuge).							2			1	3
	41 Glen Mills Schools, Girls' Dept. Darling P. O.			1							1	2
115								1	1			2
	42 Glenruadh Village,										1	1
	43 Goodyear Lumber Company (now called Norwich Lumber Co.)						2					2
116											1	1
117						1						1
118		1	1					2	1	1		6
119				1	1							2
120		1										1
	44 Hamilton, John (permit for part of College Twp., later annexed to the borough).				1			1				2
	45 Hamilton Sewer Company, Hamilton Village,								1			1
	46 Hanover Sewer Co.,				1							1
	Homeo. State Hosp. for Insane, Rittersville.											
121								1				1
	Erie Improvement Company,											

SEWERAGE AND SEWAGE DISPOSAL PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH WITH THE AGREEMENT OF THE GOVERNOR AND THE ATTORNEY GENERAL, AND PLACES SERVED, 1905-1915—Continued.

PLACES SERVED.		RECIPIENTS OF PERMITS AND DECREES.		Permits and decrees by years opposite numbered entries of recipients.										
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150	Harrisburg, Dauphin Co.,	122		1	1		2		2			2		8
	Harrisburg, Dauphin Co. (vicinity),		Penna. State Lun. Hosp. (Susquehanna Township).											
	Harrisburg, Dauphin Co. (vicinity),		Suburban Drainage Co. (Susquehanna Township).											
151	Harrison Township, Allegheny Co.,	123			1									1
152	Hastings, Cambria Co.,	124					1	1		1			1	4
153	Haverford Township, Delaware Co.,		Beechwood Park Amusement Co. (Project abandoned).											
	Haverford Township, Delaware Co.,		47 Haverford College,			1								1
154	Hazleton, Luzerne Co.,	125					1	1	1	1		1		5
155	Heidelberg, Allegheny Co.,	126										1		1
156	Heidelberg Township, Berks Co.,		Bethany Orphans Home,											
157	Hempfield Township, Westmoreland Co.,		State Police Barracks, near Greensburg,											
158	Highland Township, Elk Co.,		James City Realty Co.,											
159	Hollidaysburg, Blair Co.,	127		1										1
	Radnor Township, Delaware Co.,		48 Home & Hosp. of the Good Shepherd,						1					1
160	Homestead, Allegheny Co.,	128								1	1			2

	Hanover Township, Lehigh Co.,		49 Homeo. State Hosp. for the Insane, Rittersville.			1						1	2
161	Hopewell Township, Beaver Co.,		Jones & Laughlin Steel Co. (Sewers taken over by Woodlawn, inc. 1909).										
	Middletown Township, Delaware Co.,		House of Refuge of E. Penna. Now Glen Mills Schools q v.										
162	Houtzdale, Clearfield Co.,	129				1		1		1			3
	Columbus Township, Warren Co.,		50 Howard, J. W. & A. P., & Co., Ltd., near Corry.			1							1
	Mt. Carmel Township, Northumberland Co.,		51 Howells, Thos. X., Kulpmont P. O.,								1		1
163	Hughestown, Luzerne Co.,	130										1	1
164	Hughesville, Lycoming Co.,	131				1				1			2
165	Huntingdon, Huntingdon Co.,	132				1					1		2
	Huntingdon, Huntingdon Co. (vicinity),		Penna. Ind. Ref. (Smithfield Township),										
166	Hyndman, Bedford Co.,	133									1		1
167	Indiana, Indiana Co.,	134			2	1					1		4
	Highland Township, Elk Co.,		52 James City Realty Company,								1		1
168	Jeannette, Westmoreland Co.,	135			1		1	1		1			4
	Pine Creek Township, Jefferson Co.,		53 Jefferson County Commissioners,					1					1
169	Jenkintown, Montgomery Co.,	136								2			2
170	Jersey Shore, Lycoming Co.,	137								2	1	1	4
171	Johnsonburg, Elk Co.,	138			2					1		1	4
172	Johnstown, Cambria Co.,	139										2	2
	Woodlawn, Beaver Co.,		54 Jones & Laughlin Steel Co. (Sewers in Hopewell Township taken over by Woodlawn, inc. in 1909).			*							*
	Burrell Township, Indiana Co.,		55 Josephine Furnace & Coke Co.,					1					1
173	Juniata, Blair Co.,	140										1	1

SEWERAGE AND SEWAGE DISPOSAL PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH WITH THE AGREEMENT OF THE GOVERNOR AND THE ATTORNEY GENERAL, AND PLACES SERVED, 1905-1915—Continued.

PLACES SERVED.		RECIPIENTS OF PERMITS AND DECREES.		Permits and decrees by years opposite numbered entries of recipients.										
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174	Kane, McKean Co.,	141			3	1				1	1		1	7
175	Kilbuck Township, Allegheny Co.,		West. Penna. Hosp. for Insane, Dixmont,											
	Kilbuck Township, Allegheny Co.,		Ben Avon Heights Sewer Co.,											
	Valencia, Butler Co.,		56 Kingsley House Association of Pittsburgh,									1		1
176	Kingston, Luzerne Co.,	142		1										1
	Kis Lyn, see Butler Township, Luzerne Co.,		Luzerne County Ind. School for Boys,											
177	Kittanning, Armstrong Co.,	143				1								1
178	Knoxville, Tioga Co.,	144					1							1
	Big Beaver Township, Beaver Co.,		57 Koppel Land Company,				2							2
179	Lancaster, Lancaster Co.,	145		1	3	2		1						7
	Manheim Township, Lancaster Co.,		58 Lancaster Development Company,										1	1
180	Lansdale, Montgomery Co.,	146									1	1		2
181	Lansdowne, Delaware Co.,	147				1		1			1			3
182	Lansford, Carbon Co.,	148		1										1
183	Latrobe, Westmoreland Co.,	149										1		1
184	Lebanon, Lebanon Co.,	150							1			2		3

185	Leet Township, Allegheny Co.,		Fair Oaks Land Company,										
	South Whitehall Township, Lehigh Co.,		59 Lehigh County Commissioners,					1					1
186	Lehighton, Carbon Co.,	151						1					1
187	Lehigh Township, Carbon Co.,		Middle Coal Field Poor District,										
188	Lewisburg, Union Co.,	152		1			1						2
189	Lewistown, Mifflin Co.,	153					1						1
190	Lewisville, Potter Co. (Ulysses P. O.),	154								1			1
191	Ligonier, Westmoreland Co.,	155		1					3		3		7
192	Lilly, Cambria Co.,	156										1	1
193	Lock Haven, Clinton Co.,	157								1	1		2
194	Lower Allen Township, Cumberland Co.,		Elkwood Sewerage Company, New Cumberland.										
195	Lower Burrell Township, Westmoreland Co.,		Valley Camp Association,										
196	Lower Heidelberg Township, Berks Co.,		State Asylum for the Chron. Ins., Wernersville.										
	Lower Heidelberg Township, Berks Co.,		Walter Sanitarium,										
197	Lower Merion Township, Montgomery Co.,	158		1	1		2			2			6
	Lower Merion Township, Montgomery Co.,		American Bridge Company, Pencoyd P. O.										
198	Lower Providence Township, Montgomery Co.,		Phila. Jewish Sanatorium, Eagleville,										
199	Lower Towamensing Township, Carbon Co.,		New Jersey Zinc Co. (Territory inc. in Palmerton Oct. 14, 1912).										
	Lower Towamensing Township, Carbon Co.,		Palmer Land Company. (Territory inc. in Palmerton Oct. 14, 1912).										
	Shade Township, Somerset Co.,		60 Loyalhanna Coal & Coke Company, Cairnbrook Village.								1		1
	Butler Township, Luzerne Co.,		61 Luzerne Co. Ind. School for Boys, Kis-Lyn,									1	1
200	Lykens, Dauphin Co.,	159								1		1	2

SEWERAGE AND SEWAGE DISPOSAL PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH WITH THE AGREEMENT OF THE GOVERNOR AND THE ATTORNEY GENERAL, AND PLACES SERVED, 1905-1915—Continued.

PLACES SERVED.		RECIPIENTS OF PERMITS AND DECREES.		Permits and decrees by years opposite numbered entries of recipients.										
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201	McAdoo, Schuylkill Co.,	160					2							2
	Selinsgrove, Snyder Co.,		62 McClure, H. M.,	2									1	3
202	McKeesport, Allegheny Co.,	161				3			1					4
203	Mahoning Township, Montour Co.,		State Hosp. for the Insane, Danville,											
204	Manheim Township, Lancaster Co.,		Lancaster Development Co.,											
205	Manorville, Armstrong Co.,	162					1							1
206	Mansfield, Tioga Co.,	163						1						1
207	Marianna, Washington Co.,		Pittsburgh-Buffalo Company,											
208	Marcus Hook, Delaware Co.,	164			1		1	1					1	4
209	Marion Heights,	165											1	1
	Uniontown, Fayette Co.,		63 Markle & Frank,				1							1
210	Mars, Butler Co.,	166					1	2				1		4
211	Masontown, Fayette Co.,	167						1	1					2
	Carbondale Township, Lackawanna Co.,		64 Mayfield Yards (Citizens),					1						1
212	Meadville, Crawford Co.,	168		1					1	1				3
	East Fallowfield Township, Chester Co.,		65 Megargee Paper Mills,									1		1

213	Mercer, Mercer Co.,	169					1								1
214	Meyersdale, Somerset Co.,	170							1		1				2
	Lehigh Township, Carbon Co.,		66 Middle Coal Field Poor District,								1				1
215	Middleburg, Snyder Co.,	171												1	1
216	Middletown, Dauphin Co.,		67 Middletown Drainage Company,				1			1	1				3
217	Middletown Township, Bucks Co.,		Rumpf's Sons, Frederick,												
218	Middletown Township, Delaware Co.,		Delaware Co. House of Employment,												
	Middletown Township, Delaware Co.,		Glen Mills Schools (Girls' Department),												
	Middletown Township, Delaware Co.,		Penna. Training School for F. M. C., Elwyn.												
	Middletown Township, Delaware Co.,		Williamson Free School of Mech. Trades,												
219	Millbourne, Delaware Co.,	172									1	1			2
220	Mill Creek Township, Erie Co.,		Erie Improvement Co. of Erie,												
	Mill Creek Township, Erie Co.,		Glenruadh Village,												
221	Mill Hall, Clinton Co.,	173									1				1
222	Millvale, Allegheny Co.,	174						1		1					2
223	Millville, Columbia Co.,	175					1								1
224	Milton, Northumberland Co.,	176		1			1							1	3
225	Miners Mills, Luzerne Co.,	177					1							1	2
226	Minersville, Schuylkill Co.,	178				1									1
227	Monaca, Beaver Co.,	179				1									1
	Cranberry Township, Venango Co.,		68 Monarch Park Hotel Company,											1	1
228	Monessen, Westmoreland Co.,	180					1	1	1						3
229	Monongahela, Washington Co.,	181											1	1	2
230	Montgomery, Lycoming Co.,	182				1							2		3
231	Montrose, Susquehanna Co.,	183											1		1

SEWERAGE AND SEWAGE DISPOSAL PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH WITH THE AGREEMENT OF THE GOVERNOR AND THE ATTORNEY GENERAL, AND PLACES SERVED, 1905-1915—Continued.

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232	Moreland Township, Montgomery Co.,		Bryn Athyn Village Association,											
	Moreland Township, Montgomery Co.,		Phila. Rapid Transit Company, Willow Grove Park.											
	Morganza, Washington Co.,		Penna. Training School (Cecil Township),											
233	Mt. Carmel, Northumberland Co.,	184		1		1								2
234	Mt. Carmel Township, Northumberland Co.,		Howells, Thos. X.,											
	Mt. Carmel Township, Northumberland Co.,		Susquehanna Coal Company,											
	South Londonderry Township, Lebanon Co.,		69 Mt. Gretna Park,					2						2
235	Mt. Lebanon Township, Allegheny Co.,	185								1	3			4
236	Mt. Oliver, Allegheny Co.,	186					1							1
237	Mt. Pleasant, Westmoreland Co.,	187					2	1						3
238	Mt. Pleasant Township, Washington Co.,		Pittsburgh Coal Co., Montour Village No. 1.											
239	Mt. Union, Huntingdon Co.,	188				1			1	1				3
240	Muncy, Lycoming Co.,	189										1		1
241	Nanticoke, Luzerne Co.,	190					1							1
242	Narberth, Montgomery Co.,	191			1									1

243	Nazareth, Northampton Co.,	192						1	1				2
	Nazareth, Northampton Co.,		70 Nazareth Sewerage Company (agent of borough).							1			1
244	Nescopeck, Luzerne Co.,	193									1		1
245	New Berlin, Union Co.,		Schoch, Jacob M.,										
246	New Brighton, Beaver Co.,	194						1	2				3
247	New Castle, Lawrence Co.,	195		2	2	1	1	1					7
248	New Cumberland, Cumberland Co.,	196						1					1
	New Cumberland, Cumberland Co. (vicinity),		Elkwood Sewerage Company (Lower Allen Township).										
	Palmerton, Carbon Co.,		71 New Jersey Zinc Company,		1								1
249	New Kensington, Westmoreland Co.,	197				1	1			1	1	1	5
250	New Oxford, Adams Co.,		72 New Oxford Drainage Company,		1								1
251	Newport, Perry Co.,	198			2								2
252	Newton Township, Lackawanna Co.,		Scranton Poor District, Hillside Home,										
253	New Wilmington, Lawrence Co.,	199				2	1						3
254	Norristown, Montgomery Co.,	200								1	1		2
	Norristown, Montgomery Co.,		State Hosp. for the Insane of the S. E. District.										
255	North Braddock, Allegheny Co.,	201					1	2		1	1		5
256	North Charleroi, Washington Co.,	202						1			1		2
257	North East, Erie Co.,	203				1				1	1	1	5
258	North Manheim Township, Schuylkill Co.,		Schuylkill Co. Poor Farm and Hosp. for the Insane.										
259	Northumberland, Northumberland Co.,	204		1			1			1			3
260	North Wales, Montgomery Co.,	205										1	1
	Edinboro, Erie Co.,		Northwestern State Normal School of Edinboro.										

SEWERAGE AND SEWAGE DISPOSAL PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH WITH THE AGREEMENT OF THE GOVERNOR AND THE ATTORNEY GENERAL, AND PLACES SERVED, 1905-1915—Continued.

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261	Norwich Township, McKean Co.,		Goodyear Lumber Company (now called Norwich Lumber Company).											
262	Norwood, Delaware Co.,	206							1		1			2
263	Oakdale, Allegheny Co.,	207										1		1
264	Oakmont, Allegheny Co.,	208			1									1
265	O'Hara Township, Allegheny Co.,		Allegheny City Home,											
	O'Hara Township, Allegheny Co.,		Allegheny County Work House,											
	O'Hara Township, Allegheny Co.,		Aspinwall-Delafield Co.,											
	O'Hara Township, Allegheny Co.,		Blaw Steel Centering Co.,											
	O'Hara Township, Allegheny Co.,		Pittsburgh Filter Plant,											
266	Oil City, Venango Co.,	209		1			2							3
267	Old Forge, Lackawanna Co.,	210							2				2	4
268	Olyphant, Lackawanna Co.,	211				1	2	1		1				5
269	Osborne, Allegheny Co.,	212		1	2		1	1		1				6
270	Palmerton (Inc. Oct. 14, 1912, from L. Towamensing Twp., Carbon Co.)		New Jersey Zinc Company,											
	Palmerton (Inc. Oct. 14, 1912, from L. Towamensing Twp., Carbon Co.)		73 Palmer Land Company (Sewerage taken over by Palmerton Disposal Co. Oct. 1, 1912).			1			1					2

271	Parker, Armstrong Co.,	213						1			1		2
272	Parkesburg, Chester Co.,	214								1	1		2
273	Parnassus, Westmoreland Co.,	215			1						1		2
274	Parsons, Luzerne Co.,	216					1	1		1			3
275	Patterson Heights, Beaver Co.,	217				1			1				2
	Pencoyd, P. O.,		American Bridge Company, Lower Merion Twp.										
	Springdale, Allegheny Co.,		74 Penna. Glue Company,	1									1
	Smithfield Township, Huntingdon Co.,		75 Penna. Ind. Ref., Huntingdon,				1						1
	West Donegal Township, Lancaster Co.,		76 Penna. Masonic Homes,									1	1
	State College, Centre Co.,		77 Penna. State College,					1		1			2
	Susquehanna Township, Dauphin Co.,		78 Penna. State Lun. Hosp., Harrisburg,				1						1
	Cecil Township, Washington Co.,		79 Penna. Training School, Morganza,			1		1					2
	Middletown Township, Delaware Co.,		80 Penna. Training School for F. M. C., Elwyn.			1		1					2
276	Perkasie, Bucks Co.,		Cressman, Philip,										
277	Petersburg, Huntingdon Co.,	218						1					1
278	Philadelphia,	219			8	8	14	15	12	9	*15	18	18	117
	Philadelphia,		81 Phila. Inst. for F. M. & Byberry Farms Tub. Sana. (First and last decrees for latter only).							2		1		3
	Lower Providence Township, Montgomery Co.,		82 Phila. Jewish Sana., Eagleville,				1						1
	Moreland Township, Montgomery Co.,		83 Phila. Rapid Transit Company, Willow Grove Park.							1			1
279	Pine Creek Township, Jefferson Co.,		Jefferson County Commissioners,										
280	Pitcairn, Allegheny Co.,	220			1		1	1					3

*One permit concerns night-soil disposal.

SEWERAGE AND SEWAGE DISPOSAL PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH WITH THE AGREEMENT OF THE GOVERNOR AND THE ATTORNEY GENERAL, AND PLACES SERVED, 1905-1915—Continued.

PLACES SERVED.		RECIPIENTS OF PERMITS AND DECREES.		Permits and decrees by years opposite numbered entries of recipients.										
Numbering of municipalities.	Municipalities numbered alphabetically; and again entered opposite alphabetical entries of non-municipal recipients; also some post offices and villages.	Numbering of municipal owners.	Private corporations, individuals and institutions, numbered alphabetically; and again entered opposite alphabetical entries of places served.	1905 & 1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	Total
281	Pittsburgh, Allegheny Co.,	221						4					1	5
	Cecil Township, Washington Co.,		84 Pittsburgh Coal Co., Montour Village No. 2,										1	1
	Cecil Township, Washington Co.,		85 Pittsburgh Coal Co., Montour Village No. 4,										1	1
	Mt. Pleasant Township, Washington Co.,		86 Pittsburgh Coal Co., Montour Village No. 1,										1	1
	O'Hara Township, Allegheny Co.,		87 Pittsburgh Filter Plant,		1									1
	Marianna, Washington Co.,		88 Pittsburgh-Buffalo Company,						1		1			2
282	Pittston, Luzerne Co.,	222											1	1
283	Plains Township, Luzerne Co.,		89 Plains Township School Board,										1	1
284	Pleasantville, Venango Co.,	223						1		2				3
285	Plymouth, Luzerne Co.,	224							1					1
286	Polk, Venango Co.,		State Inst. for Feeble-Minded,											
287	Portage, Cambria Co.,	225							1	1				2
288	Port Allegany, McKean Co.,	226								1				1
289	Port Royal, Juniata Co.,	227								1				1
290	Pottstown, Montgomery Co.,	228								1				1

291	Pottsville, Schuylkill Co.,	229			*1	1	1							3
	Yorkville													
292	Prospect Park, Delaware Co.,	230									1			1
293	Punxsutawney, Jefferson Co.,	231					1	1					1	3
294	Quakertown, Bucks Co.,	232						1						1
295	Radnor Township, Delaware Co.,		Wayne Sewerage Company,											
	Radnor Township, Delaware Co.,		Home & Hosp. of the Good Shepherd,											
296	Rankin, Allegheny Co.,	233								1				1
297	Reading, Berks Co.,	234				3							1	4
	Reno, P. O.,		Venango Oil & Land Company, Sugarcreek Township.											
298	Renovo, Clinton Co.,	235					1		1		1			3
	Renovo, Clinton Co. (vicinity),		Proctor Land Company (Chapman Township).											
299	Reynoldsville, Jefferson Co.,	236				1								1
300	Ridgway, Elk Co.,	237				1				1				2
301	Ridley Township, Delaware Co.,	238											1	1
302	Ridley Park, Delaware Co.,	239				1				1	1			3
	Rittersville, Lehigh Co.,		Homeo. State Hosp. for the Insane, Hanover Township.											
303	Rochester, Beaver Co.,	240						1						1
304	Rouseville, Venango Co.,	241										1		1
	Middletown Township, Bucks Co.,		90 Rumpf's Sons, Fred.,						1					1
	Willistown Township, Chester Co.,		91 Rush Hospital, Country Branch,						1					1
305	St. Clair, Allegheny Co.,	242					1							1

*Permit 1907 (Annexed later in 1907 to Pottsville).

SEWERAGE AND SEWAGE DISPOSAL PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH WITH THE AGREEMENT OF THE GOVERNOR AND THE ATTORNEY GENERAL, AND PLACES SERVED, 1905-1915—Continued.

Numbering of municipalities.	Municipalities numbered alphabetically; and again entered opposite alphabetical entries of non-municipal recipients; also some post offices and villages.	Numbering of municipal owners.	Private corporations, individuals and institutions, numbered alphabetically; and again entered opposite alphabetical entries of places served.	1905 & 1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	Total
	RECIPIENTS OF PERMITS AND DECREES.			Permits and decrees by years opposite numbered entries of recipients.										
306	St. Clair, Schuylkill Co.,	243				1								1
	Bensalem Township, Bucks Co.,		92 St. Francis Industrial School, Eddington P. O.							1				1
307	St. Marys, Elk Co.,	244			1								1	2
308	Saltsburg, Indiana Co.,	245			1									1
309	Sayre, Bradford Co.,	246		1			1							2
310	Scalp Level, Cambria Co.,	247			1	2								3
	New Berlin, Union Co.,		93 Schoch, Jacob M., et al.,									1		1
	North Manheim Township, Schuylkill Co.,		94 Schuylkill County Poor Farm & Hosp. for the Insane.						1					1
311	Schuylkill Haven, Schuylkill Co.,	248						1						1
312	Scottdale, Westmoreland Co.,	249				1	1							2
313	Scott Township, Allegheny Co.,	250						1						1
	Scott Township, Allegheny Co.,		Delmont Land Co. Annexed in 1909 to Dormont q. v.											
	Scott Township, Allegheny Co.,		Dysart, A. P.,											
314	Scranton, Lackawanna Co.,	251											1	1
	Newton Township, Lackawanna Co.,		95 Scranton Poor District, Hillside Home,								1			1

315	Selinsgrove, Snyder Co.,		McClure, H. M.,									1	1	2
316	Sellersville, Bucks Co.,	252												
317	Sewickley, Allegheny Co.,	253				1	1							2
	Abington Township, Montgomery Co.,		96 Seybert Institution,								1			1
318	Shade Township, Somerset Co.,		Loyalhanna Coal & Coke Co., Cairnbrook Village.											
319	Shaler Township, Allegheny Co.,	254			1									1
320	Sharon, Mercer Co.,	255				1				1	1			3
321	Sharon Hill, Delaware Co.,	256		1		1					1			3
322	Sharpesville, Mercer Co.,	257				1		1						2
323	Shenandoah, Schuylkill Co.,	258				1					1			2
324	Shingle House, Potter Co.,	259						1						1
325	Siverly, Venango Co.,	260					1							1
326	Slippery Rock, Butler Co.,	261					1							1
	Slippery Rock, Butler Co.,		97 Slippery Rock State Normal School,										1	1
327	Smethport, McKean Co.,	262					1						1	2
328	Smithfield Township, Huntingdon Co.,		Penna. Ind. Ref., Huntingdon,											
329	Smith Township, Washington Co.,		American Zinc & Chemical Company, Langloth Village.											
330	Somerset, Somerset Co.,	263						1		1				2
331	Somerset Township, Somerset Co.,		98 Somerset County Home,							2				2
332	South Abington Township, Lackawanna Co.,		Cramer Realty Company (Lansdowne Park Village).											
333	South Bethlehem, Armstrong Co.,	264					1					1		2
334	South Bethlehem, Northampton Co.,	265		1				2	1	2				6

SEWERAGE AND SEWAGE DISPOSAL PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH WITH THE AGREEMENT OF THE GOVERNOR AND THE ATTORNEY GENERAL, AND PLACES SERVED, 1905-1915—Continued.

PLACES SERVED.		RECIPIENTS OF PERMITS AND DECREES.		Permits and decrees by years opposite numbered entries of recipients.										
Numbering of municipalities.	Municipalities numbered alphabetically; and again entered opposite alphabetical entries of non-municipal recipients; also some post offices and villages.	Numbering of municipal owners.	Private corporations, individuals and institutions, numbered alphabetically; and again entered opposite alphabetical entries of places served.	1905 & 1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	Total
335	South Brownsville, Fayette Co.,	266						1	1		1		1	4
	South Canonsburg, Washington Co. (Now part of Canonsburg, q. v.)													
336	South Connellsville, Fayette Co.,	267											1	1
337	South Fork, Cambria Co.,	268						3		1			1	5
338	South Heidelberg Township, Berks Co.,		Galen Mountain Co.,											
339	South Londonderry Township, Lebanon Co.,		Mt. Gretna Park,											
340	South Renovo, Clinton Co.,	269									1	1		2
	South Sharon (in 1912 became Farrell q. v.),													
341	South West Greensburg, Westmoreland Co.,	270											1	1
342	South Whitehall Township, Lehigh Co.,		Lehigh County Commissioners,											
	Spring City, Chester Co. (vicinity),		East. Penna. State Inst. for F. M. & E. (E. Vincent Township).											
343	Springdale, Allegheny Co.,	271							1	1	1			3
	Springdale, Allegheny Co.,		Penna. Glue Company,											
344	Springfield Township, Delaware Co.,		Dermany Sanatorium near Morton,											
345	State College, Centre Co.,	272									1		1	2

	State College, Centre Co.,		John Hamilton (permit for part of College Twp. later annexed to the borough).											
	State College, Centre Co.,		Penna. State College,											
			STATE INSTITUTIONS.											
			(Permits credited in alphabetical order.)											
	West Pikeland Township, Chester Co.,		Chester Springs Soldiers' Orphans' School,											
	East Vincent Township, Chester Co.,		East. Penna. Inst. for F. M. & E., near Spring City.											
	Hanover Township, Lehigh Co.,		Homeo. State Hosp. for the Insane, Rittersville.											
	Smithfield Township, Huntingdon Co.,		Penna. Industrial Ref., Huntingdon,											
	State College, Centre Co.,		Penna. State College,											
	Susquehanna Township, Dauphin Co.,		Penna. State Lun. Hosp., at Harrisburg,											
	Cecil Township, Washington Co.,		Penna. Training School, Morganza,											
	Lower Heidelberg Township, Berks Co.,	99	State Asylum for the Chron. Ins. of Penna., Wernersville.				1							1
	Canaan Township, Wayne Co.,	100	State Hosp. for the Crim. Ins., Farview Station.							1				1
	Mahoning Township, Montour Co.,	101	State Hosp. for the Insane, Danville,				1							1
	Conewago Township, Warren Co.,	102	State Hosp. for the Insane, Warren,		1					1				2
	Norristown, Montgomery Co.,	103	State Hosp. for the Insane of the S. E. District.				1	1						2
	Polk, Venango Co.,	104	State Inst. for Feeble-Minded of West. Penna.		1			1						2
	Hempfield Township, Westmoreland Co.,	105	State Police Barracks near Greensburg,							1				1
346	Steelton, Dauphin Co.,	273											1	1
347	Stoney Creek Township, Cambria Co.,	274											1	1
348	Stoyestown, Somerset Co.,	275		1										1

SEWERAGE AND SEWAGE DISPOSAL PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH WITH THE AGREEMENT OF THE GOVERNOR AND THE ATTORNEY GENERAL, AND PLACES SERVED, 1905-1915—Continued.

PLACES SERVED.		RECIPIENTS OF PERMITS AND DECREES.		Permits and decrees by years opposite numbered entries of recipients.										
Numbering of municipalities.	Municipalities numbered alphabetically; and again entered opposite alphabetical entries of non-municipal recipients; also some post offices and villages.	Numbering of municipal owners.	Private corporations, individuals and institutions, numbered alphabetically; and again entered opposite alphabetical entries of places served.	1905 & 1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	Total
349	Stroudsburg, Monroe Co.,	276				1								1
	Susquehanna Township, Dauphin Co.,		106 Suburban Drainage Company, Harrisburg,				1		1	1				3
350	Sugarcreek Township, Venango Co.,		Venango Oil & Land Company, Reno P. O.,											
351	Summerhill, Cambria Co.,	277							1	1				2
352	Summit Hill, Carbon Co.,	278			1	1		1						3
353	Sunbury, Northumberland Co.,		East End Sewer Company,											
	Sunbury, Northumberland Co.,		Susquehanna Sewer Company,											
	Sunbury, Northumberland Co.,		Third Ward Sewer Company,											
	Mt. Carmel Township, Northumberland Co.,		107 Susquehanna Coal Company,										1	1
354	Susquehanna Depot, Susquehanna Co.,	279		1			1	1						3
	Sunbury, Northumberland Co.,		108 Susquehanna Sewer Company,	1										1
355	Susquehanna Township, Dauphin Co.,		Penna. State Lun. Hosp., Harrisburg,											
	Susquehanna Township, Dauphin Co.,		Suburban Drainage Company,											
356	Swarthmore, Delaware Co.,	280				1	1				1			3
357	Swissvale, Allegheny Co.,	281										1		1
358	Tarentum, Allegheny Co.,	282				1	2				1	1		5
359	Taylor, Lackawanna Co.,	283			1		1							2

360	Taylor Township, Lawrence Co.,			West Pittsburgh Realty Company,									
	Sunbury, Northumberland Co.,			109 Third Ward Sewer Company,	1								1
361	Thornbury Township, Delaware Co.,			Cheyney Training School for Teachers,									
	Thornbury Township, Delaware Co.,			Glen Mills Schools (Boys' Department),									
362	Throop, Lackawanna Co.,		284						1			1	2
363	Titusville, Crawford Co.,		285		1	1						1	3
364	Towanda, Bradford Co.,		286					1		1			2
	Zerbe Township, Northumberland Co.,			110 Trevorton Sewerage Company,			1						1
365	Troy, Bradford Co.,		287								1		1
	Troy, Bradford Co.,			111 Troy Citizens Committee,							1		1
366	Turtle Creek, Allegheny Co.,		288									1	1
367	Tyrone, Blair Co.,		289					1				1	2
	Ulysses P. O. (see Lewisville),												
368	Union City (borough), Erie Co.,		290				1				1	1	4
369	Uniontown, Fayette Co.,		291				2	1		1	1		5
	Uniontown, Fayette Co.,			Markle & Frank,									
370	Upland, Delaware Co.,		292				1		1				2
371	Upper Augusta Township, Northumberland Co.,			Hamilton Sewer Company, Hamilton Village.									
372	Upper Darby Township, Delaware Co.,		293							2	1	1	5
	Upper Darby Township, Delaware Co.,			Burn Brae Hospital,									
373	Valencia, Butler Co.,			Kingsley House Association of Pittsburgh,									
	Lower Burrell Township, Westmoreland Co.,			112 Valley Camp Association,					1				1
374	Vandergrift, Westmoreland Co.,		294									1	1
	Sugarcreek Township, Venango Co.,			113 Venango Oil & Land Company, Reno Village,							1		1
375	Verona, Allegheny Co.,		295			1	1		1				3

SEWERAGE AND SEWAGE DISPOSAL PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH WITH THE AGREEMENT OF THE GOVERNOR AND THE ATTORNEY GENERAL, AND PLACES SERVED, 1905-1915—Continued.

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376	Versailles, Allegheny Co.,	296			1									1
	East Bethlehem Township, Washington Co.,		114 Vesta Coal Company,					1			1			2
377	Wall, Allegheny Co.,	297			1									1
	Lower Heidelberg Township, Berks Co.,		115 Walter Sanitarium,									1		1
378	Warren, Warren Co.,	298		1	1		1	1		1		1		6
	Warren, Warren Co. (vicinity),		State Hosp. for the Insane (Conewago Twp.)						1					1
379	Warrior Run, Luzerne Co.,	299			1		1	1	1	1	2	1	2	10
380	Washington, Washington Co.,	300							1					1
	Washington and East Washington,					1								1
381	Watsontown, Northumberland Co.,	301								1				2
	Radnor Township, Delaware Co.,		116 Wawne Sewerage Company,	1						1				2
382	Weatherly, Carbon Co.,	302								1				1
383	Wellsboro, Tioga Co.,	303		1		1								2
	Wernersville P. O., Berks Co.,		State Asylum for the Chron. Ins. (L. Heidelberg Township).											
384	West Bradford Township, Chester Co.,		Chester Co. Home & Hosp. for the Insane,											
385	West Brownsville, Washington Co.,	304					1		1	1				3

386	West Burlington Township, Bradford Co.,		Bradford County Commissioners,										
387	West Chester, Chester Co.,	305		1				1	1			2	2	7
388	West Donegal Township, Lancaster Co.,		Penna. Masonic Homes,											
389	West End, Venango Co.,	306					1						1	2
390	Westfield, Tioga Co.,	307											1	1
391	West Hazleton, Luzerne Co.,	308					1			1		1		3
	Baldwin Township, Allegheny Co.,		117 West Liberty Improvement Company,					1						1
392	West Middlesex, Mercer Co.,	309		1										1
393	West Newton, Westmoreland Co.,	310					1	1		1	1	1		5
	Kilbuck Township, Allegheny Co.,		118 West. Penna. Hosp. for the Insane, Dixmont.				1							1
394	West Pikeland Township, Chester Co.,		Chester Springs Soldiers' Orphans' School,											
	Taylor Township, Lawrence Co.,		119 West Pittsburgh Realty Company,				1	1		1				3
395	West Pittston, Luzerne Co.,	311											1	1
396	West Reynoldsville, Jefferson Co.,	312				1								1
397	West View, Allegheny Co.,	313					1		1			1		3
398	White Haven, Luzerne Co.,	314				1								1
	College Hill, Beaver Co.,		120 Whiteside, Robt. A.,				1							1
399	Wickboro, Armstrong Co.,	315				1								1
400	Wilkes-Barre, Luzerne Co.,	316								1			1	2
401	Wilkinsburg, Allegheny Co.,	317						1						1
402	Wilkins Township, Allegheny Co.,		East Wilkinsburg Improvement Co.,											
	Middletown Township, Delaware Co.,		121 Williamson Free School of Mechanical Trades.			1								1
403	Williamsport, Lycoming Co.,	318			2									2

SEWERAGE AND SEWAGE DISPOSAL PERMITS AND DECREES ISSUED BY THE COMMISSIONER OF HEALTH WITH THE AGREEMENT OF THE GOVERNOR AND THE ATTORNEY GENERAL, AND PLACES SERVED, 1905-1915—Continued.

PLACES SERVED.		RECIPIENTS OF PERMITS AND DECREES.		Permits and decrees by years opposite numbered entries of recipients.										
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404	Willistown Township, Chester Co.,		Rush Hospital, Country Branch,											
	Willow Grove Park, Moreland Township, Montgomery Co.		Phila. Rapid Transit Company,											
405	Wilmerding, Allegheny Co.,	319											1	1
406	Winton, Lackawanna Co.,	320				1								1
407	Woodlawn, Beaver Co. (Inc. 1909. Has taken over sewers authorized by permit* in 1908 to Jones & Laughlin Steel Co.)	321				*1						1		2
408	Wyoming, Luzerne Co.,	322			1			1		1	1			4
409	Yeadon, Delaware Co.,	323				1		1			1			3
410	York, York Co.,	324		1	1							1	3	7
411	Yorkville, Schuylkill Co. (Permit in 1907.) Annexed later in 1907 to Pottsville q. v.	325			*									*
412	Youngsville, Warren Co.,	326		1									1	2
413	Youngwood, Westmoreland Co.,	327				1							1	2
414	Zelienople, Butler Co.,	328		1		1			1					3
415	Zerbe Township, Northumberland Co.,		Trevorton Sewerage Company,											
	Summary of permits,			51	86	129	114	111	80	119	109	102	123	1,024

CLASSIFICATIONS OF SEWERAGE AND SEWAGE TREATMENT PERMITS AND DECREES ISSUED 1905-1915.

Before the State undertook the regulation of the sewage pollution of its waters through the legislation requiring the public authorities having by law the charge of the sewer system of any municipality to submit their sewerage plans for the approval of the Governor, the Attorney General and the Commissioner of Health, haphazard methods of building sewers regardless of system were quite common throughout the Commonwealth. Now this has been changed. Some idea of the value of the engineering work of the State Department of Health may be obtained from considering the number of comprehensive plans for public sewerage systems which have been prepared and submitted to the Department for approval up to the present time as a result of its formal requirements and educational program. There are two hundred and fifteen such comprehensive plans that have been approved, either in detail or tentatively, in permits and decrees issued by agreement of the Governor, Attorney General and Commissioner of Health, and the necessary extensions of these systems from year to year are being made in conformity with these plans. When the interests of the public health demand the purification of the sewage of these places they will not have to spend large sums to remodel the sewers. The following table gives the two hundred and fifteen recipients of permits and decrees approving comprehensive sewerage plans:

1. Aldan.
2. Aliquippa.
3. Allentown.
4. Altoona.
5. Arnold.
6. Aspinwall-Delafield Co.
7. Avalon.
8. Avoca.
9. Baden.
10. Beaver.
11. Bedford.
12. Bellevue.
13. Bellwood.
14. Ben Avon.
15. Blairsville.
16. Blakely.
17. Brackenbridge.
18. Bradford.
19. Bristol.
20. Butler-Highfields Land and Improvement Company.
21. Cambridge Springs.
22. Canonsburg.
23. Carbondale.
24. Carlisle.
25. Carmichaels.
26. Carrick.
27. Chambersburg.
28. Charleroi.
29. Cheltenham Township, Montgomery County.
30. Chester.
31. Cheswick.
32. Clearfield.
33. Coaldale.
34. Coatesville.
35. College Hill.
36. Collier Land Company.
37. Collingdale.
38. Columbia.
39. Colwyn.
40. Connellsville.
41. Corry.
42. Coudersport.
43. Cramer Realty Company.
44. Cressman, Philip (Perkasie).
45. Cresson.
46. Danville.
47. Darby.
48. Derry.
49. Dickson City.
50. Donora.
51. Dormont.
52. Dorranceton.
53. Downingtown.
54. Doylestown Sewerage Company.
55. Drocton Land Company.
56. Duquesne.
57. Dunmore.
58. Duryea.
59. Dysart, A. P. (Scott Township, Allegheny County).

60. Eagles Mere.
61. East Brady.
62. East Lansdowne.
63. East McKeesport.
64. East Mauch Chunk.
65. Easton.
66. East Wilkinsburg Improvement Company.
67. Eddystone.
68. Edinboro.
69. Edwardsville.
70. Ellwood City.
71. Emlenton.
72. Emsworth.
73. Erie.
74. Erie Improvement Company.
75. Etna.
76. Evansburg.
77. Everson.
78. Fair Oaks Land Company.
79. Farrell.
80. Forest City.
81. Forty Fort.
82. Glenolden.
83. Goodyear Lumber Company (now Norwich Lumber Co.)
84. Green Tree.
85. Greenville.
86. Grove City.
87. Hamilton, John (State College).
88. Harrisburg.
89. Hastings.
90. Heidelberg.
91. Houtzdale.
92. Hyndman.
93. Indiana.
94. Jeannette.
95. Jenkintown.
96. Jersey Shore.
97. Johnstown.
98. Johnsonburg.
99. Juniata.
100. Kane.
101. Kingston.
102. Koppel Land Company.
103. Lancaster.
104. Lansdale.
105. Lansdowne.
106. Latrobe.
107. Lebanon.
108. Lehighton.
109. Lewisburg.
110. Lewistown.
111. Lewisville.
112. Ligonier.
113. Lower Merion Township, Montgomery County.
114. Lykens.
115. McAdoo.
116. Marcus Hook.
117. Mars.
118. Masontown.
119. Mayfield Yards (Citizens).
120. Mercer.
121. Meyersdale.
122. Middletown Drainage Company.
123. Millbourne.
124. Millvale.
125. Milton.
126. Miners Mills.
127. Monessen.
128. Montgomery.
129. Montrose.
130. Mt. Carmel.
131. Mt. Gretna Park.
132. Mt. Lebanon Township, Allegheny County.
133. Mt. Oliver.
134. Mt. Pleasant.
135. Mt. Union.
136. Narberth.
137. Nazareth.
138. New Brighton.
139. New Castle.
140. New Kensington.
141. Newport.
142. New Wilmington.
143. North Charleroi.
144. North East.
145. Northumberland.
146. North Wales.
147. Oakdale.
148. Olyphant.
149. Osborne.
150. Palmer Land Company (Sewerage taken over by Palmerton Disposal Co.)
151. Parker.
152. Parkesburg.
153. Parsons.
154. Patterson Heights.
155. Philadelphia.
156. Pleasantville.
157. Portage.
158. Pottstown.
159. Quakertown.
160. Reading.
161. Renovo.
162. Ridgway.
163. Ridley Park.
164. Rouseville.
165. St. Clair, Allegheny County.
166. St. Marys.
167. Sayre.
168. Scott Township, Allegheny Co.
169. Sellersville.
170. Sewickley.
171. Shaler Township, Allegheny Co.
172. Sharon.
173. Sharon Hill.
174. Sharpsville.
175. Siverly.
176. Somerset.
177. South Brownsville.
178. South Connellsville.
179. South Fork.
180. South Renovo.
181. Springdale.
182. State College.
183. Suburban Drainage Company.
184. Summerhill.
185. Summit Hill.
186. Susquehanna.
187. Swarthmore.
188. Tarentum.
189. Throop.
190. Towanda.
191. Troy.
192. Union City.
193. Uniontown.
194. Upland.
195. Upper Darby Township, Delaware County.
196. Vesta Coal Company.
197. Wall.
198. Warren.
199. Washington.
200. Watsontown.
201. Wayne Sewerage Company.
202. West Chester.

203. West End.
204. Westfield.
205. West Hazleton.
206. West Liberty Improvement Co.
207. West Newton.
208. West Pittsburgh Realty Co.
209. West View.
210. Wilkinsburg.
211. Winton.
212. Woodlawn.
213. Wyoming.
214. Yeadon.
215. York.

For one hundred and three places sewage treatment works have been built or are in progress of erection in accordance with plans considered in permits and decrees issued by the State Department of Health. The recipients of such permits and decrees are as follows:

1. Allegheny City Home, O'Hara Township.
2. Allegheny County Home and Hospital for Insane, Collier Township.
3. Allegheny County Workhouse, O'Hara Township.
4. Altoona.
5. American Bridge Company, Lower Merion Township, Montgomery County.
6. American Zinc and Chemical Company, Smith Township, Washington County.
7. Beaver Falls.
8. Bethany Orphans' Home, Heidelberg Township, Berks County.
9. Blaw Steel Centering Company, O'Hara Township, Allegheny County.
10. Bradford County Home, West Burlington Township, Bradford County.
11. Bristol.
12. Brittain, A. R., et al, East Stroudsburg.
13. Bryn Athyn Village Association, Moreland Township, Montgomery County.
14. Buck Hill Falls Company, Barrett Township, Monroe County.
15. Burne Brae Hospital, Upper Darby Township, Delaware County.
16. Carlisle.
17. Chambersburg.
18. Chester County Home and Hospital for the Insane, West Bradford Township.
19. Chester Springs Soldiers' Orphans' School, West Pikeland Township, Chester County.
20. Collier Land Company, Collier Township, Allegheny County.
21. Cramer Realty Company, Lansdowne Park, South Abington Township, Lackawanna County.
22. Cressman, Philip (public sewerage of Perkasie and Sellersville).
23. Delaware County House of Employment, Middletown Township.
24. Dermady Sanatorium, Springfield Township, Delaware County.
25. Derry.
26. Dixmont Hospital for the Insane, Kilbuck Township, Allegheny County.
27. Dormont.
28. Downingtown.
29. Doylestown Sewerage Company.
30. Eastern Pennsylvania State Institution for the Feeble-Minded and Epileptic, East Vincent Township, Chester County.
31. *East Washington.
32. Ebensburg.
33. Galen Mountain Company, South Heidelberg Township, Berks County.
34. Glen Mills Schools, Boys' Department, Thornbury Township, Delaware County.
35. Glen Mills Schools, Girls' Department, Middletown Township, Delaware County.
36. Goodyear Lumber Company (now Norwich Lumber Company), Norwich Township, McKean County.
37. Haverford College, Haverford Township, Delaware County.
38. Home and Hospital of the Good Shepherd, Radnor Township, Delaware County.
39. Homeopathic State Hospital for the Insane, Hanover Township, Lehigh County.
40. Howard, J. W. and A. P. and Company, Ltd., tannery, Columbus Township, Warren County (near Corry).
41. Indiana.
42. Kingsley House Association of Pittsburgh (Valencia).
43. Lebanon.
44. Lehigh County Home and Almshouse, South Whitehall Township.
45. Ligonier.
46. Loyalhanna Coal and Coke Company, Shade Township, Somerset County.
47. Mars.

48. Masonic Homes of Pennsylvania, West Donegal Township, Lancaster County.
49. Megargee Paper Mills, East Fallowfield Township, Chester County.
50. Montrose.
51. Middle Coal Field Poor District, Lehigh Township, Carbon County.
52. Mount Gretna Park, South Londonderry Township, Lebanon County.
53. Mount Lebanon Township, Allegheny County.
54. Nazareth Sewerage Company (temporary works).
55. New Jersey Zinc Company, Palmerton.
56. New Wilmington.
57. North East.
58. North Wales.
59. Oakdale.
60. Palmer Land Company, Palmerton (sewerage taken over by Palmerton Disposal Company, October 1, 1912).
61. Parker.
62. Parkesburg.
63. Pennsylvania Glue Company, Springdale.
64. Pennsylvania Industrial Reformatory, Smithfield Township, Huntingdon County.
65. Pennsylvania State College, State College.
66. Pennsylvania State Lunatic Hospital, Susquehanna Township, Dauphin County.
67. Pennsylvania Training School, Cecil Township, Washington County.
68. Pennsylvania Training School for Feeble-Minded Children, Elwyn, Middletown Township, Delaware County.
69. Philadelphia (Pennypack Creek District).
70. Philadelphia Jewish Sanatorium for Consumptives, Lower Providence Township, Montgomery County.
71. Philadelphia Rapid Transit Company, Willow Grove Park, Moreland Township, Montgomery County.
72. Pittsburgh Coal Company, Montour Village No. 1, Mt. Pleasant Township, Washington County.
73. Pittsburgh Coal Company, Montour Village No. 2, Cecil Township, Washington County.
74. Pittsburgh Coal Company, Montour Village No. 4, Cecil Township, Washington County.
75. Pittsburgh Filter Plant, near Aspinwall, O'Hara Township, Allegheny County.
76. Pleasantville.
77. Reading.
78. Rumpf's Sons, Frederick, Middletown Township, Bucks County.
79. Rush Hospital, Country Branch, Willistown Township, Chester County.
80. Saint Francis Industrial School, Bensalem Township, Bucks County.
81. Schuylkill County House of Employment, North Manheim Township.
82. Scranton Poor District, Hillside Home, Newtown Township, Lackawanna County.
83. Seybert Institution, Abington Township, Montgomery County.
84. †Sellersville (plant owned by Philip Cressman).
85. Somerset County Home, Somerset Township.
86. South Renovo.
87. State Asylum for the Chronic Insane of Pennsylvania, Lower Heidelberg Township, Berks County.
88. ‡State College Borough.
89. State Hospital for the Insane, Mahoning Township, Montour County.
90. State Hospital for the Insane, Conewago Township, Warren County.
91. State Hospital for the Insane of the Southeastern District, Norristown, Montgomery County.
92. State Institution for Feeble-Minded of Western Pennsylvania, Polk, Venango County.
93. State Police Barracks, Hempfield Township, Westmoreland County.
94. Tarentum.
95. Troy.
96. Valley Camp Association, Lower Burrell Township, Westmoreland County.
97. Walter Sanatarium, Lower Heidelberg Township, Berks County.
98. Washington.
99. Wayne Sewerage Company, Radnor Township, Delaware County.
100. West Chester.
101. Westfield.
102. Williamson Free School of Mechanical Trades, Middletown Township, Delaware County.
103. York.

*Washington plant treats also East Washington Sewage.
‡Pennsylvania State College plant to treat also State College borough sewage temporarily.
†Perkasie plant to be enlarged to treat sewage from Sellersville.

In eighty-three cases plans for sewage treatment works have been submitted to, and considered either finally or tentatively by, the State Department of Health, but no construction work has been done. The recipients of permits and decrees dealing with these plans are as follows:

1. Allentown.
2. Beechwood Park Amusement Company (project abandoned), Haverford Township, Delaware County.
3. Bellwood.
4. Brownsville.
5. Butler.
6. Canonsburg.
7. Carbondale Machine Company, Fell Township, Lackawanna County.
8. Carmichaels.
9. Cheltenham Township, Montgomery County.
10. Chester.
11. Clearfield.
12. Coatesville.
13. *Colwyn.
14. Connellsville.
15. Corry.
16. Coudersport.
17. Danville.
18. *Darby.
19. Devon (Citizens), Easttown Township, Chester County.
20. Donora.
21. Easton.
22. Edinboro.
23. Ellwood City.
24. Erie.
25. Farrell.
26. Freeport.
27. Greenville.
28. Grove City.
29. Houtzdale.
30. Huntingdon.
31. Hyndman.
32. Jefferson County Home, Pine Creek Township.
33. Jenkintown.
34. Johnsonburg.
35. Johnstown.
36. Lansdale.
37. *Lansdowne.
38. Lehighton.
39. Lewisville.
40. Marcus Hook (pumping plant).
41. Masontown.
42. Meadville.
43. Meyersdale.
44. Milton.
45. Monessen.
46. Montgomery.
47. Mt. Carmel.
48. Nazareth (permanent works).
49. New Brighton.
50. New Castle.
51. New Kensington.
52. New Oxford Drainage Company, New Oxford.
53. Newport.
54. Norristown (preliminary treatment).
55. Philadelphia (general plans for Northeast and Southeast portions).
56. Philadelphia (night-soil disposal plant).
57. Philadelphia Institution for Feeble-Minded and Byberry Farms Tuberculosis Sanatorium.
58. Portage.
59. Pottstown.
60. Quakertown.
61. Renovo.
62. Ridley Park.
63. St. Marys.
64. Sewickley.
65. Sharon.
66. Sharpsville.
67. Slippery Rock State Normal School.
68. Somerset.
69. South Bethlehem, Northampton County.
70. South Brownsville.
71. South Fork.
72. Springdale.
73. State Hospital for the Criminal Insane, Canaan Township, Wayne County.
74. Susquehanna.
75. Swarthmore.
76. Towanda.
77. Union City.
78. Upper Darby Township, Delaware County (tentative approval of site).
79. Vesta Coal Company, East Bethlehem Township, Washington County.
80. West Hazleton.
81. West Pittsburgh Realty Company, Taylor Township, Lawrence County.
82. West View.
83. *Yeadon.

*Tentative joint scheme for four places.

In most of the above cases the sewage treatment plans were prepared as a part of the comprehensive sewerage plans, and provide for the treatment of the sewage in the near future when this shall have become necessary. Meantime, the temporary discharge of crude sewage is permitted. Several others of the above places are small communities which have no sewers as yet, but have prepared sewage

treatment plans in advance. A few are delinquent and are discharging sewage illegally into State waters, among them the New Oxford Drainage Company, which has constructed crude sewage treatment works not in accordance with modifications recommended by the State Department of Health to be made in the plans originally submitted by the company for approval. The existing sewage disposal plant at Devon is a crude works which this Department has never approved. At the State Hospital for the Criminal Insane at Farview a crude temporary treatment plant has been installed pending final arrangements for the construction of the complete works, tentatively approved as indicated in the foregoing list.

A popular election is necessary under the State Constitution to pass upon a municipal indebtedness in excess of two per centum of the taxable valuation of the town. Such an election is often necessary to provide funds for a sewage treatment plant or for other extensive public improvements, although the street sewers are often paid for by assessing abutting properties.

Six municipalities among those listed above as having done nothing toward the execution of sewage treatment plans approved have been handicapped by the results of popular elections at which the necessary municipal indebtedness failed of authorization. These places are as follows:

1. Allentown.
2. Easton.
3. Norristown.
4. Union City.
5. Upper Darby Township, Delaware County.
6. Johnstown.

In one hundred and sixty-seven instances permits which have been issued for the temporary discharge of sewage into the waters of the State have dates of expiration prior to the close of the current year. There are various reasons why the sewage from some of these places may be permitted to discharge into the natural watercourses for a while longer. A number have applications pending for extensions of time. Several have submitted for approval sewage treatment plans, which have been held tentatively under consideration. In some instances the borrowing capacities of municipalities have not been sufficient to enable them to undertake the installation of sewage treatment works, even should the people authorize the full limit of indebtedness. This condition should prove less of an obstacle as a result of the constitutional amendment approved in 1913, the purport of which is to exclude municipal obligations for certain profit-earning improvements from consideration within the meaning of the constitutional limitation of municipal indebtedness, and, furthermore, to increase this limit from seven per centum to ten per centum of the value of taxable property within the municipality. The names of recipients of these permits are given in the following list:

1. Aliquippa.
2. American Steel and Wire Co.
3. Archbald.
4. Athens.
5. Avoca.
6. Baden.
7. Bath.
8. Beaver.
9. Bellevernon.
10. Bellevue.
11. Blairsville.
12. Blakely.
13. Bradford.
14. Brownsville.
15. California.
16. Cambridge Springs.
17. Carbondale.
18. Carrick.
19. Catawissa.
20. Charleroi.
21. Chartiers Township, Allegheny County.
22. Chester.
23. Cheswick.
24. Clairton.
25. Coaldale.
26. Coatesville.
27. Collier Land Company (settled sewage).
28. Collingdale.
29. Columbia.
30. Colwyn.
31. Coraopolis.
32. Corry.
33. Coudersport.
34. Crafton.
35. Cresson.
36. Darby.
37. Dickson City.
38. Donora.
39. Dorranceton.
40. Drocton Land Company.
41. DuBois.
42. Duryea.
43. Eagles Mere.
44. East Lansdowne.
45. Eddystone.
46. Edwardsville.
47. Elkwood Sewerage Company.
48. Emlenton.
49. Erie.
50. Erie Improvement Company.
51. Everson.
52. Fair Oaks Land Company.
53. Ford City.
54. Forest City.
55. Forty Fort.
56. Franklin.
57. Glassport.
58. Glenolden.
59. Greenville.
60. Grove City.
61. Hamilton, John (State College).
62. Harrisburg.
63. Hazleton.
64. Hollidaysburg.
65. Homestead.
66. Houtzdale.
67. Kingston.
68. Kittanning.
69. Lancaster.
70. Lansdowne.
71. Lansford.
72. Lewisburg.
73. Lewistown.
74. Lewisville.
75. McAdoo.
76. Manorville.
77. Mayfield Yards.
78. Meadville.
79. Mercer.
80. Middletown Drainage Co.
81. Millbourne.
82. Millvale.
83. Monaca.
84. Monessen.
85. Monongahela.
86. Montgomery.
87. Mt. Carmel.
88. Mt. Oliver.
89. Mt. Pleasant.
90. Mt. Union.
91. Muncy.
92. Nanticoke.
93. New Castle.
94. New Cumberland.
95. New Kensington.
96. Newport.
97. North Charleroi.
98. North East.
99. Northumberland.
100. Norwood.
101. Oakmont.
102. Oil City.
103. Olyphant.
104. Osborne.
105. Parkesburg.
106. Parsons.
107. Philadelphia.
108. Pitcairn.
109. Pittsburgh.
110. Pittsburgh-Buffalo Co. (Marianna).
111. Plymouth.
112. Portage.
113. Prospect Park.
114. Renovo.
115. Reynoldsville.
116. Ridgway.
117. Ridley Park.
118. Rouseville.
119. St. Clair, Allegheny Co.
120. Saltsburg.
121. Sayre.
122. Scalp Level.
123. Scottdale.
124. Scott Township, Allegheny Co.
125. Sewickley.
126. Sharon.
127. Sharon Hill.
128. Sharpsville.
129. Shenandoah.
130. Shinglehouse.
131. Siverly.
132. Somerset.
133. South Bethlehem, Northampton County.
134. Springdale.
135. Stoyestown.
136. Stroudsburg.
137. Suburban Drainage Company (near Harrisburg).
138. Summerhill.
139. Summit Hill.
140. Susquehanna.
141. Susquehanna Sewer Company (Sunbury).
142. Swarthmore.
143. Tarentum.
144. Taylor.
145. Third Ward Sewer Company (Sunbury).

146. Titusville.
147. Union City.
148. Uniontown.
149. Upper Darby Township, Delaware County.
150. Verona.
151. Warren.
152. Warrior Run.
153. Watsontown.
154. West Chester (storm overflows).
155. West Hazleton.
156. West Liberty Improvement Company.
157. West Pittsburgh Realty Co.
158. West View.
159. Wickboro.
160. Wilkinsburg.
161. Williamsport.
162. Winton.
163. Woodlawn.
164. Wyoming.
165. Yeadon.
166. York.
167. Youngsville.

The names of recipients and dates of expiration of permits and decrees issued relative to the temporary discharge of sewage into waters of the State for various periods in the future are given in the next table. All these places are required to submit sewage treatment plans to the Department for approval at definite dates within the duration of the permits or else to take up the preparation of such plans upon the order of the Commissioner of Health, except those places for which sewage treatment plans have already been approved as previously mentioned.

Name.	Year of Expiration.		
	1916	1917	1918
1. Avalon,	*		
2. Barnesboro,	*		
3. Beaver Falls (partially treated sewage),			*
4. Bedford,	*		
5. Ben Avon,		*	
6. Butler,	*		
7. Canonsburg,	*		
8. Clearfield,		*	
9. Connellsville,	*		
10. Dale,	*		
11. Danville,	*		
12. Duquesne,		*	
13. East McKeesport,	*		
14. Ebensburg,	*		
15. Edinboro,	*		
16. Emsworth,		*	
17. Exeter,		*	
18. Ferndale,		*	
19. Freeport,		*	
20. Gallitzin,		*	
21. Gaysport,	*		
22. Greensburg,	*		
23. Hastings,		*	
24. Hughestown,		*	
25. Huntingdon,	*		
26. Hyndman,	*		
27. Johnsonburg,	*		
28. Johnstown,		*	
29. Johnstown (2nd permit),		*	
30. Juniata,	*		
31. Kane,	*		
32. Latrobe,	*		
33. Lilly,	*		
34. Lykens,		*	
35. Marcus Hook,		*	
36. Meyersdale,	*		
37. Milton,	*		
38. Minersville,		*	
39. Montrose (disinfected sewage),	*		
40. Mount Lebanon Township, Allegheny Co.,	*		
41. Oakdale (disinfected sewage),		*	
42. Old Forge,	*		
43. Parker (disinfected sewage),	*		
44. Pittston,		*	

Name.	Year of Expiration.		
	1916	1917	1918
45. Punxsutawney,	*		
46. Ridley Township, Delaware County,	*		
47. St. Marys,	*		
48. Smethport,	*		
49. South Bethlehem (Armstrong County),		*	
50. South Brownsville,		*	
51. South Connellsville,		*	
52. South Fork,		*	
53. South Renovo,		*	
54. Southwest Greensburg,	*		
55. Steelton,	*		
56. Throop,		*	
57. Towanda,	*		
58. Turtle Creek,		*	
59. Vandergrift,	*		
60. West End,	*		
61. Westfield,	*		
62. West Pittston,		*	
63. Wilkes-Barre,		*	
64. Wilmerding,		*	
65. York (2nd permit),	*		
66. York (3rd permit),	*		
67. Youngwood,	*		

For twenty-two places permits and decrees have been issued relative to the discharge of sewage into State waters temporarily, but without setting a date for the discontinuance of this discharge of sewage. These permits and decrees also require the preparation of sewage treatment plans either at a definite date or upon the order of the Commissioner of Health and the sewage may have to be treated at any time. The recipients of these permits and decrees are as follows:

1. Aspinwall-Delafield Company.
2. Dayton.
3. Dunmore.
4. Dysart, A. P. (Scott Township, Allegheny County).
5. East Wilkinsburg Improvement Company.
6. Etna.
7. Fairchance.
8. Hamilton Sewer Company, Upper Augusta Township, Northumberland County.
9. Howells, Thomas X., Mt. Carmel Township, Northumberland County.
10. Indiana (emergency storm overflow).
11. Lancaster Development Company.
12. Lower Merion Township.
13. McClure, H. M. (Selinsgrove).
14. Minersville.
15. Narberth.
16. Nazareth (disinfected sewage).
17. New Brighton.
18. North Braddock.
19. Philadelphia.
20. Susquehanna Coal Company, Mt. Carmel Township, Northumberland County.
21. Swissvale.
22. Wellsboro.

The Aspinwall-Delafield Company discharges sewage into Aspinwall borough sewer system and it is stipulated that whenever sewage treatment is required of the borough the same requirement will be made of the company.

Dayton received a permit for the discharge of kitchen waste from five houses only into a storm sewer, the discharge to be discontinued whenever ordered.

Dunmore discharges sewage into the sewers of Scranton and will be required to take up the question of sewage treatment when the latter place is so required.

The sewer system installed by A. P. Dysart has been taken over by Scott Township and is subject to the requirements imposed upon this township.

The East Wilkinsburg Improvement Company discharges sewage into the sewers of North Braddock, which, under the terms of a mutual agreement, is responsible for the treatment of the sewage when this becomes necessary.

To the Hamilton Sewer Company and to Thomas X. Howells decrees of advice were addressed relative to the temporary discharge of sewage from private sewer systems for which permits may not be issued within the law.

Indiana received a permit for the discharge of sewage from an emergency storm overflow pending a systematic investigation and repair of the sewer system which conducts the sewage of the town to a modern sewage treatment plant.

The sewage from the Lancaster Development Company's system is discharged into the sewers of the city of Lancaster. When it becomes necessary to treat the sewage in any other manner the Development Company will be required to submit plans to the Department for approval.

The sewers of Lower Merion Township and, through them, the sewers of Narberth discharge into the sewerage system of Philadelphia, under a mutual agreement relative to ultimate sewage disposal.

The permit to Nazareth is for the discharge of partially purified sewage and requires the complete purification of sewage whenever this becomes necessary.

Etna, Fairchance, H. M. McClure (who maintains a sewer system for Selinsgrove), Minersville, New Brighton, North Braddock and Swissvale will be required to take up the question of sewage treatment when it is practicable for the matter to be taken up in a general way in all places in their respective sections. The sewers from many of these places go into streams grossly polluted with acid mine drainage, so that there is no need at the present time for more than the preparation of comprehensive plans for the collection of sewage and its conveyance to a suitable site for a future treatment plant. A few of the places have prepared tentative sewage treatment plans as shown elsewhere.

A permit was issued to Philadelphia by the State approving a general comprehensive scheme for the collection and treatment of the sewage of the city. This plan will be followed and construction work undertaken from time to time as funds can be made available and after approval of detail plans by the State Department of Health.

A decree of advice has been issued to the Susquehanna Coal Company relative to the discharge of sewage into a tributary of Shamokin Creek heavily laden with acid mine drainage. The company has been required to file an agreement in writing with the Department promising to discontinue the discharge of sewage whenever requested to do so.

Wellsboro is not at present able to assume the financial obligations necessary for sewage treatment works; only a few much needed specific extensions have been approved and a permit for further extensions has been withheld.

Permits have been issued to twelve places which have not accepted them because of the terms stipulated by the Governor, Attorney General and Commissioner of Health. These places are as follows:

1. Bloomsburg.
2. Clintonville.
3. Coudersport.
4. East Brady.
5. East Mauch Chunk.
6. Heidelberg.
7. Jeannette.
8. Port Allegany.
9. Rankin.
10. Steelton.
11. Wall.
12. West Middlesex.

There are seventy-two places for which decrees have been issued requiring the discontinuance of the discharge of sewage into State waters or withholding permission to increase this discharge. The recipients of these decrees are as follows:

1. Aldan.
2. Arnold.
3. Ashley.
4. Beaver Falls.
5. Bellefonte.
6. Ben Avon Heights Sewer Company.
7. Big Run.
8. Brackenridge.
9. Brookville.
10. Butler-Highfields Land and Improvement Co.
11. Canton.
12. Carrolltown.
13. Claysville.
14. Clifton Heights.
15. College Hill.
16. Dale.
17. East End Sewer Company.
18. East Stroudsburg.
19. Edgeworth.
20. Eldred.
21. Elizabethville.
22. Emporium.
23. Evansburg.
24. Exeter.
25. Gilberton.
26. Green Tree.
27. Hallstead.
28. Hanover Sewer Company.
29. Hanover Township, Luzerne County.
30. Harrison Township, Allegheny Co.
31. Heidelberg.
32. Hughesville.
33. James City Realty Company, Highland Township, Elk County.
34. Jersey Shore.
35. Josephine Furnace and Coke Company.
36. Knoxville.
37. Koppel Land Company.
38. Lock Haven.
39. McKeesport.
40. Mansfield.
41. Marion Heights.
42. Markle and Frank, Uniontown.
43. Middleburg.
44. Mill Hall.
45. Millville.
46. Nescopeck.
47. Old Forge.
48. Parnassus.
49. Patterson Heights.
50. Petersburg.
51. Port Royal.
52. Pottsville.
53. Rochester.
54. Scranton.
55. St. Clair, Schuylkill County.
56. Schoch, Jacob M., et al., New Berlin.
57. Schuylkill Haven.
58. Shaler Township, Allegheny Co.
59. Slippery Rock.
60. Trevorton Sewerage Company.
61. Tyrone.
62. Upland.
63. Venango Oil and Land Company, Sugarcreek Township, Venango County.
64. Versailles.
65. Weatherly.
66. West Brownsville.
67. West Newton.
68. West Reynoldsville.
69. White Haven.
70. Whiteside, Robert A. (College Hill).
71. Wilkes-Barre.
72. Zelienople.

11. DESIGN AND CONSTRUCTION SECTION.

The engineering design and construction work undertaken by the Engineering Division in connection with the establishment by the State Department of Health of the Pennsylvania State sanatoria for tuberculosis at Mont Alto, Cresson and Hamburg was practically consummated in 1914, with the completion of the last-named sanatorium, known as No. 3.

The working force of the Design and Construction Section, as a consequence, has been greatly diminished. Several former members are now in other sections, as shown in the list of Department employes elsewhere in this report. Also the remaining members have done considerable work in other sections on different occasions.

The work of the Design and Construction Section during 1915 has comprised the compiling of the necessary data and the making and combining of record plans of the grounds and buildings, water works, sewerage and other engineering works at each of the above-named sanatoria.

The entire drafting work of the Department also has been done under the direct supervision of the assistant engineer in charge of this section and has already been outlined more in detail under the head of Office Work.

12. TESTS OF WATER AND SEWAGE TREATMENT PLANTS.

The section of the Engineering Division in charge of State supervision of operation, and tests conducted by the Department, of the various water and sewage treatment plants operating within Pennsylvania has been maintained throughout the year under the general direction of the Chief Engineer and the immediate supervision of the principal assistant engineer in charge of this section. The section has also had supervision over the distribution of outfits for the collection of all water and sewage samples for bacteriological analysis in the Department's laboratories in connection with the work of the Engineering Division.

One hundred and twenty-nine water filtration plant inspections were made covering sixty-five different plants. One hundred and twelve sewage treatment plant inspections were made covering sixty-nine different plants. Special attention was given to obtaining the fulfillment of conditions of permits requiring operation reports from water works not having purification works. In this connection one hundred and fourteen different water works were inspected and arrangements made for the submission of satisfactory reports.

This section has had charge of the investigation and supervision of emergency measures in connection with twelve typhoid fever out-

breaks and has assisted in three others. It has also conducted a number of special investigations.

The reports upon such of these typhoid fever outbreaks and investigations as are worth detail mention will be found elsewhere in this report.

Apparatus for the addition of a chemical germicide to the public water supply was installed under the direction of an officer of this section to meet emergency conditions at each of the following nineteen places:

1. Apollo, Armstrong County.
2. Brookville, Jefferson County.
3. Butler, Butler County.
4. Carlisle, Cumberland County.
5. Ellwood City, Lawrence County.
6. Enola, Cumberland County.
7. Ernest Village, Indiana County.
8. Falls Creek, Jefferson County.
9. Hummelstown, Dauphin County.
10. Iselin Village, Indiana County.
11. Kittanning, Armstrong County.
12. Latrobe, Westmoreland County.
13. Mechanicsburg, Cumberland County.
14. Punxsutawney, Jefferson County.
15. Ridgway, Elk County.
16. Spring Grove, York County.
17. Wernersville, Berks County.
18. Waynesburg, Greene County.
19. West Pittsburgh, Lawrence County.

WATER FILTRATION PLANTS.

During 1915 there were one hundred and twenty-three water filtration plants in the State, all but four of which were in operation. The four plants not in operation were those located at Haysville, Newport, Quarryville and Wrightsville, where auxiliary supplies were used. Seven of the one hundred and twenty-three plants were placed in operation during the year. The St. Benedict filter plant, shown in the 1914 report, was not in operation during 1915, and this plant has been abandoned, as another source of water supply has been obtained. All of the new plants were inspected to learn whether or not the plans submitted to this Department and the permits issued for the construction and operation of the plants had been followed. Fifty-eight of the old plants were inspected to ascertain their efficiency and method of operation. Bacteriological samples were usually collected and simple chemical determinations made during the inspections. Upon the results of inspections and analyses action was taken to improve the operation and efficiency of the plant.

The seven filtration plants placed in operation during 1915 were as follows:

1. Emlenton, Emlenton Water Company.
2. Hershey, Hershey Water Company.
3. Holtwood, Pennsylvania Water and Power Company.
4. Langhorne, Langhorne Spring Water Company.
5. McDonald, Citizens Water Company of McDonald.
6. Oakmont, Suburban Water Company.
7. Reading, Reading Suburban Water Company.

The permits issued by the Commissioner of Health for the construction and operation of water filtration plants require that the officials in charge shall make reports to the Department of Health concerning the operation and efficiency of the plants as operated by them. The reports submitted set forth a daily record of the operation of the pumping station, filter plant and laboratory. For the pumping station is shown the number of hours the raw and filtered water pumps are in action and the number of gallons pumped. Concerning the daily operation of the filter plant is shown the number of filter units in service, the loss of head before washing, the number of gallons used in washing each unit, the number of minutes the filters are permitted to filter to waste, and the number of pounds of chemical used in the preparation of the water for filtration and for sterilization after filtration. The laboratory work at the various plants differs considerably since the waters to be treated are so variable. At the small plants the laboratory keeps a record of the weather conditions, the temperature of air and water; makes alkalinity, turbidity and color determinations, bacteriological examination showing the number of bacteria per c. c. in the raw and treated water, and presumptive tests for B. coli in the raw and treated water. At the larger plants considerable additional laboratory work is performed, such as daily bacteriological analyses and frequent chemical analyses. The following table shows the number of water filtration plants making chemical and bacteriological determinations and submitting operation reports:

Frequency.	Chemical.		Bacteriological examinations.	Reports submitted.
	Partial tests.	Complete analyses.		
Daily,	73		30	
Three a week,			4	
Semi-weekly,	2		5	
Weekly,	8	9	27	91
Bi-weekly,		5	12	1
Monthly,	2	2	16	15
Occasional,	3	4	10	
None,	36	104	19	17

By partial analyses are meant those determinations, such as color, alkalinity and turbidity, that are fundamental in the operation of filter plants. By complete analyses are meant the making of complete mineral and sanitary chemical analyses.

Ninety-six of the one hundred and three rapid sand plants use sulphate of alumina as a coagulant. Two of the three semi-rapid sand plants, and three of the seventeen slow sand plants also use the same chemical. The amount of alum added to each gallon of water treated is being reduced each year. Chlorine gas is replacing hypochrolite of lime in some of the more modern installations.

The various chemicals used and the number of plants using each are shown in the following table:

Chemicals Used.	Plants.
Sulphate of alumina,	101
Hydrated lime,	21
Chlorinated lime,	104
Sodium carbonate,	12
Ferrous sulphate,	4
Sodium thiosulphate,	1
Chlorine gas,	10

The accompanying chart gives the location and name of each of the one hundred and twenty-three filtration plants together with the name of the district in which water is furnished, population of the district, number of consumers, million gallons consumed each day, source of supply, date when the water works was built and the purification plant installed, the kind of filter used, number of filter units in each plant, number of million gallons capacity, sedimentation period, the frequency with which analyses and reports are made and data concerning the equipment of the plant and the chemicals used in treating the water.

PUBLIC WATER FILTRATION

No.	Location and Name.	Water Furnished.
1	Acosta—Consolidation Coal Co.,	Acosta,
2	Apollo—Apollo Water Works Co.,	Apollo, Leechburg, West Apollo, Paulton, Oklahoma.
3	Beaver Valley Water Co., East Vale plant.	Beaver Valley towns,
4	Beaver Valley W. Co., New Brighton plant.	Beaver Valley towns,
5	Berwick—Berwick Water Co.,	Berwick, Nescopeck and vicinity,
6	Bloomsburg—Bloomsburg Water Co.,	Bloomsburg,
7	Brackenridge—Allegheny Valley Water Co.	Brackenridge, part of Tarentum and vicinity.
8	Bristol—Municipal water works,	Bristol,
9	Brookville—Municipal water works,	Brookville,
10	Butler—Butler Water Co.,	Butler,
11	California—California Water Co.,	California,
12	Cambridge Springs—Municipal water works.	Cambridge Springs,
13	Canonsburg—North Strabane Water Co.,	Canonsburg,
14	Carlisle—Carlisle Gas and Water Co.,	Carlisle,
15	Catasauqua—Clear Springs Water Co.,	Lehigh Valley towns—Cementon to Catasauqua,
16	Charleroi—Tri-Cities Water Co.,	Charleroi, Monessen, Donora and vicinity,
17	Chester—New Chester Water Co.,	Chester and suburbs,
18	Clarion—Clarion Water Co.,	Clarion,
19	Coatesville—Municipal water works,	Coatesville,
20	Columbia—Columbia Water Co.,	Columbia,
21	Connellsville—Connellsville Water Co.,	Connellsville and suburbs,
22	Danville—Municipal water works,	Danville,
23	Danville—State Hospital water works,	Hospital for the Insane,
24	Eagles Mere—Eagles Mere Water Co.,	Eagles Mere,
25	East Greenville—Municipal water works,	East Greenville and vicinity,
26	Elizabeth—Monongahela Valley Water Co.	Monongahela Valley towns,
27	Ellwood City—Ellwood Water Co.,	Ellwood City,
28	Emlenton—Emlenton Water Co.,	Emlenton,
29	Enola—Dauphin Consolidated W. S. Co.,	Enola village,
30	Erie—Municipal water works,	Erie and suburbs,
31	Ernest—Jefferson and Clearfield C. & I. Co.	Ernest village,
32	Evitts—Evitts Creek Water Co.,	Cumberland Valley Township, Bedford County, and Cumberland, Md.
33	Falls Creek—Municipal water works,	Falls Creek,
34	Franklin—Municipal water works,	Franklin and suburbs,
35	Freeport—Freeport water works Co.,	Freeport and suburbs,
36	Gettysburg—Gettysburg Water Co.,	Gettysburg,
37	Greenville—Greenville Water Co.,	Greenville,
38	Hamburg—State Sanatorium for Tuberculosis.	Sanatorium,
39	Harrisburg—Municipal water works,	Harrisburg and suburbs,
40	Haysville—Haysville Water Co.,	Haysville and parts of Osborne and Glenfield,
41	Hershey—Hershey Water Co.,	Hershey village and vicinity,
42	Holtwood—Pennsylvania Water & Power Co.	Holtwood and power plant,
43	Hummelstown—Hummelstown Consol. W. Co.	Hummelstown and part of Swatara Twp.,
44	Huntingdon—Huntingdon Water Supply Co.	Huntingdon and suburbs,
45	Huntingdon—Penna. Industrial Reformatory.	Reformatory,
46	Indiana—Clymer Water Co.,	Indiana,
47	Iselin—Pittsburgh Gas Coal Co.,	Iselin village,
48	Jacobs Creek—Pittsburgh Coal Co.,	Jacobs Creek village,
49	Jenkintown—Moreland Spring Water Co.,	Jenkintown and vicinity,
50	Jonestown—Lebanon Valley Cons. W. S. Co.	Part of Lebanon and suburban districts,
51	Kittanning—Armstrong Water Co.,	Kittanning,
52	Lancaster—Lancaster Filtration Co.,	Lancaster and suburbs,
53	Langhorne—Langhorne Spring Water Co.,	Langhorne, South Langhorne, and vicinity,
54	Latrobe—Latrobe Water Co.,	Latrobe and parts of Derry and Unity Twps.,
55	McDonald—Citizens Water Co. of McDonald.	McDonald and vicinity,

PLANTS IN PENNSYLVANIA, 1915.

Population of district.	Number of consumers.	Million gallons filtered daily.	Source of Supply.	Water works built.	Filter Units Installed.
1,000	1,000	0.030	Drilled well,	1908	1914
8,000	7,500	0.520	Beaver Run,	1888	1903
24,400	21,000	4.000	Beaver River,	1875	6-1892; 4-1900
12,200	10,000	2.000	Beaver River,	1876	5-1904; 2-1907
16,000	15,000	1.500	Susquehanna River,	1848	1914
8,000	7,500	1.410	Fishing Creek,	1877	1913
12,000	8,000	2.250	Allegheny River,	1886	1908
11,060	8,300	0.540	Delaware River,	1875	1906
3,300	3,000	0.425	North Fork of Red Bank Creek,	1883	1912
24,600	20,000	2.900	Connoquenessing Creek and Thorn Run.	1878	4-1902; 2-1903; 4-1906
2,400	1,800	0.100	Monongahela River,	1901	1914
4,000	3,500	0.188	French Creek,	1898	1908
8,000	6,000	0.900	Little Chartiers Creek,	1892	2-1910; 3-1911
11,000	11,000	1.250	Conodoguinet Creek,	1854	1896
25,000	12,000	1.125	Mill Creek and Lehigh River,	1902	1914
36,900	27,000	2.840	Monongahela River,	1890	6-1911; 4-1913
43,000	39,000	3.435	Delaware River,	1868	12-1903; 6-1908
2,600	2,500	0.150	Drilled wells,	1875	1902
13,000	11,000	1.220	Sucker Run,	1867	1912
12,000	11,500	0.625	Susquehanna River,	1829	1902
15,000	14,000	1.200	Youghiogheny River,	1898	1900
7,500	6,500	0.790	North Branch—Susquehanna River,	1873	1905; rebuilt 1913
1,800	1,800	0.670	North Branch—Susquehanna River,	1900	1-1903; 1-1905; 2-1909
800	800	0.100	Eagles Mere Lake,	1902	1910
1,400	1,100	0.048	Perkiomen Creek,	1894	1913
17,500	14,000	1.350	Monongahela River,	1895	1901
4,500	3,800	2.325	Slippery Rock Creek,	1892	1910
1,100	950	0.144	Allegheny River,	1877	1915
1,000	950	0.070	Susquehanna River,	1905	1908
85,000	83,000	15.750	Lake Erie,	1868	1914
2,000	2,000	0.090	McKees Run,	1907	1907
25,000	25,000	6.520	Evitts Creek,	1913	1913
1,300	900	0.038	Fall's Creek,	1904	1911
11,000	9,000	0.650	French Creek and wells,	1865	1908
2,500	2,200	0.480	Allegheny River,	1884	1909
4,000	3,500	0.340	Marsh Creek,	1847	1894; rebuilt 1912
7,500	7,000	0.925	Little Shenango River,	1884	1914
600	600	0.105	Mill Creek,	1914	1914
71,000	71,000	7.930	Susquehanna River,	1843	1905
300	300	0.006	Ohio River,	1898	1914
2,000	1,850	0.520	Manada Creek,	1904	1915
100	100	0.019	Susquehanna River,	1905	1913
11,500	9,000	1.094	Swatara Creek,	1887	1909
7,500	6,500	0.355	Standing Stone Creek,	1885	6-1900; 6-1916
900	900	0.400	Juniata River,	1889	1913
6,000	5,000	0.400	Two Lick Creek,	1898	1908
2,000	2,000	0.060	Hoopers Run and Big Run,	1903	1906
450	450	0.006	Youghiogheny River,	1914	1914
5,000	2,500	0.300	Pennypack Creek,	1909	1910
25,000	9,000	1.180	Big Swatara Creek,	1910	1911
8,100	7,700	1.300	Allegheny River and Spring,	1871	1905
51,000	48,500	7.242	Conestoga Creek,	1888	1906
2,200	2,000	0.105	Chub Creek,	1886	1915
10,000	9,000	2.260	Loyalhanna Creek,	1885	1914
5,000	4,000	0.444	St. Patricks Run,	1895	1915

No.	Location and Name.	Water Furnished.
56	McKeesport—Municipal water works,	McKeesport,
57	Marianna—Marianna Water Co.,	Marianna,
58	Masontown—Municipal water works,	Masontown,
59	Mechanicsburg—Mechanicsburg Gas and Water Co.	Mechanicsburg and suburbs,
60	Media—Municipal water works,	Media, Moylan, Wallingford,
61	Middletown—Middletown and Swatara Cons. Water Co.	Middletown and suburbs,
62	Midland—Midland Water Co.,	Midland,
63	Monongahela City—Monongahela City Water Co.	Monongahela City and vicinity,
64	Montgomery—Montgomery Water Co.,	Montgomery,
65	Muncy—Muncy Water Supply Co.,	Muncy,
66	Natrona—Natrona Water Co.,	Natrona and part of Harrison Twp.,
67	New Bethlehem—Citizens Water Co.,	New Bethlehem and vicinity,
68	New Castle—City of New Castle Water Co.	New Castle,
69	New Cumberland—Riverton Cons. W. Co.	Camp Hill, Riverton, Shiremanstown, West Fairview and Wormleysburg.
70	New Kensington—Kensington Water Co.,	New Kensington, Parnassus, Arnold and part of Lower Burrell Twp.
71	New Oxford—Municipal water works,	New Oxford,
72	Newport—Newport Home Water Co.,	Newport and vicinity,
73	Norristown—Norristown Insurance and Water Co.	Norristown and Bridgeport,
74	North East—Municipal water works,	North East,
75	Oakmont—Suburban Water Co.,	Oakmont, Verona and vicinity,
76	Parker City—Parker City Water Co.,	Parker City,
77	Perkasie—Perkasie Water Supply Co.,	Perkasie,
78	Phila. Municipal Water Works—Upper Roxborough plant.	Philadelphia,
79	Phila. Municipal Water Works—Lower Roxborough plant.	Philadelphia,
80	Phila. Municipal Water Works—Belmont plant.	Philadelphia,
81	Phila. Municipal Water Works—Torresdale plant.	Philadelphia,
82	Phila. Municipal Water Works—Queen Lane plant.	Philadelphia,
83	Phila. (Holmesburg)—Philadelphia and Bristol Water Co.	Philadelphia, northern wards,
84	Phoenixville—Municipal water works,	Phoenixville and vicinity,
85	Pittsburgh—Municipal water works,	Part of Greater Pittsburgh,
86	Pottstown—Pottstown Gas and Water Co.	Pottstown and suburbs,
87	Punxsutawney—Punxsutawney Water Co.	Punxsutawney and Big Run,
88	Quarryville—Quarryville Water Co.,	Quarryville,
89	Reading Municipal Water Works—Egelman plant.	Reading,
90	Reading Municipal Water Works—Antietam plant.	Reading,
91	Reading Municipal Water Works—Bernhart plant.	Reading,
92	Reading Municipal Water Works—Maiden Creek plant.	Reading,
93	Reading—Reading Suburban Water Co.,	Suburban district north of Reading,
94	Ridgway—Municipal water works,	Ridgway,
95	Royersford—Home Water Co.,	Royersford and Spring City,
96	Sayre—Sayre Water Co.,	Sayre and Athens,
97	Scranton—Scranton Gas and Water Co.,	Scranton—Providence district,
98	Sharon—Sharon Water Works Co.,	Sharon and Farrell,
99	South Bethlehem—Bethlehem City Water Co.	South Bethlehem and vicinity,
100	South Bethlehem—Bethlehem Steel Co.,	Bethlehem Steel Works,
101	South Pittsburgh—South Pittsburgh Water Co.	Pittsburgh suburban towns,
102	Springdale—Municipal water works,	Springdale,
103	Springfield Cons. Water Co.—Neshaminy Falls station.	Philadelphia suburban towns,

IN PENNSYLVANIA, 1915—Continued.

Population of district.	Number of consumers.	Million gallons filtered daily.	Source of Supply.	Water works built.	Filter Units Installed.
42,500	40,000	4.163	Youghiogheny River,	1883	1908
1,200	1,200	0.125	Ten Mile Creek,	1908	1911
900	900	0.048	Monongahe'a River,	1911	1911
5,000	4,500	0.520	Yellow Breeches Creek and springs,	1858	1909
6,000	5,000	0.460	Ridley Creek,	1854	1898
6,000	4,000	0.260	Swatara Creek and Iron Mine Run,	1885	1910
2,000	2,000	0.480	Ohio River,	1907	1914
8,500	7,400	0.380	Monongahela River,	1887	1904
1,500	800	0.122	Black Hole Creek,	1898	1912
1,900	1,700	0.250	West Branch—Susquehanna River,	1889	1914
6,600	5,600	0.410	Allegheny River,	1908	1910
2,000	1,500	0.140	Red Bank Creek,	1883	1-1899; 1-1908
36,600	36,000	3.335	Shenango River,	1882	8-1895; 4-1904; 4-1912
6,000	3,560	0.340	Yellow Breeches Creek,	1912	1912
16,500	15,000	2.220	Allegheny River,	1890	1913
900	700	0.046	Little Conewago Creek,	1896	1914
2,200	1,800	0.000	Juniata River,	1893	1909
35,000	30,000	2.170	Schuylkill River,	1847	1901
3,000	2,800	0.240	Sixteen Mile Run and springs,	1886	1908
8,600	7,950	1.400	Allegheny River,	1894	1915
1,200	1,000	0.065	Allegheny River,	1891	1912
3,600	1,000	0.090	Railroad Run,	1911	1912
74,000	74,000	12.500	Schuylkill River,	1893	1903
78,000	78,000	9.250	Schuylkill River,	1866	1902
304,000	304,000	38.100	Schuylkill River,	1870	1906
1,075,000	1,075,000	183.000	Delaware River,	1907	1907
104,000	104,000	49.100	Schuylkill River,	1894	1911
25,000	25,000	2.000	Sandy Run and Pennypack Creek,	1888	1-1888; 3-1893; 2-1907
12,500	11,000	1.720	Schuylkill River,	1872	1914
500,000	500,000	120.250	Allegheny River,	1826	1903-1909
17,500	16,000	2.610	Schuylkill River,	1890	1909
11,000	10,000	1.060	Clover Run and Mahoning Creek,	1887	1910
750	500	0.000	McAllisters Run,	1895	1912
3,000	3,000	0.300	Spring Run,	1903	1903
23,000	23,000	3.100	Antietam Creek,	1880	1905
15,000	15,000	2.500	Bernhart Creek,	1821	1911
61,000	60,000	8.500	Maiden Creek,	1889	1913
2,000	390	0.080	Brush Valley Run,	1911	1915
6,000	5,000	1.000	Big Mill Creek,	1888	2-1908; 2-1915
6,000	5,000	0.400	Schuylkill River,	1889	1893
12,000	11,000	1.390	North Branch—Susquehanna River,	1884	1904
30,000	25,000	3.000	Leggett Creek,	1868	1910
28,000	25,000	3.300	Shenango River,	1883	4-1900; 4-1903
25,000	24,000	4.500	Lehigh River,	1885	1904
10,000	10,000	0.860	Well,	1890	1912
90,000	65,000	7.562	Monongahela River,	1895	1905
2,500	2,000	0.030	Tributary to Riddle Run,	1904	1914
25,000	16,000	1.700	Neshaminy Creek,	1910	1910

No.	Location and Name.	Water Furnished.
104	Springfield Cons. Water Co.—Pickering Creek Station.	Philadelphia suburban towns,
105	Springfield Cons. Water Co.—Pickering Creek Station.	Philadelphia suburban towns,
106	Springfield Cons. Water Co.—Springfield Station.	Philadelphia suburban towns,
107	Spring Grove—P. H. Gladfelter Co.,	Spring Grove,
108	Steelton—Municipal water works,	Steelton,
109	Sunbury—Sunbury Water Co.,	Sunbury,
110	Tarentum—Municipal water works,	Tarentum,
111	Vandergrift—Vandergrift Water Co.,	Vandergrift and vicinity,
112	Warren—Warren Water Co.,	Warren,
113	Washington—Citizens Water Co.,	Washington and suburbs,
114	Waynesburg—Waynesburg Water Co.,	Waynesburg and vicinity,
115	Wernersville—State Hospital water works,	Hospital for the Insane,
116	West Conshohocken—West Conshohocken Water Co.	West Conshohocken,
117	West Pittsburgh—West Pittsburgh Water Co.	West Pittsburgh and vicinity,
118	West Reading—West Reading Water Co.,	West Reading and Wyomissing,
119	Wilkes-Barre—Springbrook W. S. Co.,	Wilkes-Barre and suburbs,
120	Wilkes-Barre—Springbrook W. S. Co.,	Wilkes-Barre and suburbs,
121	Wilkinsburg—Pennsylvania Water Co.,	Wilkinsburg and vicinity,
122	Wrightsville—Wrightsville W. S. Co.,	Wrightsville,
123	York—York Water Co.,	York and suburbs,

IN PENNSYLVANIA, 1915—Continued.

Population of district.	Number of consumers.	Million gallons filtered daily.	Source of Supply.	Water works built.	Filter Units Installed.
54,000	44,000	3.260	Pickering Creek,	1897	1897
1,000	1,000	0.070	Pickering Creek,	1897	1897
80,000	35,000	4.250	Crum Creek,	1896	1896
1,500	1,500	0.620	West Branch—Codorus Creek,	1895	10-1895; 4-1902
14,500	14,500	1.400	Susquehanna River,	1893	1908
14,000	13,000	3.600	Little Shamokin Creek and Susquehanna River.	1884	6-1904; 2-1907
8,300	4,000	0.280	Allegheny River,	1914	1914
12,000	11,000	0.750	Artesian wells,	1895	1897-1905; 1910-1915
12,000	10,000	1.050	Morrison Run and Allegheny River,	1882	1905
20,000	15,000	1.500	Tributary—Chartiers Creek,	1887	1902
5,000	1,000	0.100	Big and Little Ten Mile Run,	1888	1902
1,000	1,000	0.370	Hospital Creek,	1894	1911
3,000	2,500	0.600	Wallace Run,	1898	1913
1,000	800	0.060	Beaver River,	1902	1911
3,500	3,500	0.156	Schuylkill River,	1886	1896; rebuilt 1914
100,000	70,000	6.500	Huntsville Lake,	1857	1895
80,000	60,000	4.500	Crystal Lake,	1857	1895
75,000	70,000	8.425	Allegheny River,	1888	1910
2,100	500	0.090	Kreutz Creek,	1914	1914
60,000	40,000	3.550	South Branch—Codorus Creek,	1816	1899

PUBLIC WATER FILTRATION PLANTS

No.	Type of Filter.	Number of units.	Rated capacity in million gallons daily.	Sedimentation basin period according to rated capacity.	Per cent. wash water.	Controller.	Filter to waste.	Loss of head gage.	Sulphate of alumina.	Chlorinated lime.
1	Rapid Sand,	1	0.12	1.0 hours,	5.0	+	+	—	—	—
2	Slow Sand,	2	2.00	None,		+	+	—	—	+
3	Rapid Sand,	10	5.00	3 hours,	4.0	+	+	—	+	+
4	Rapid Sand,	7	4.30	2.5 hours,	4.0	+	+	—	+	+
5	Rapid Sand,	3	1.65	1.8 hours,		+	+	+	+	+
6	Rapid Sand,	3	3.00	5.3 hours,	1.0	+	+	+	+	+
7	Rapid Sand,	6	3.00	2 hours,		—	+	—	+	+
8	Rapid Sand,	4	2.00	1.5 hours,		+	+	+	+	+
9	Rapid Sand,	2	1.00	3.7 hours,	1.0	+	+	+	+	+
10	Rapid Sand,	10	5.00	1.4 hours,	3.0	+	—	—	+	+
11	Rapid Sand,	2	0.40	2.3 hours,	7.0	+	+	+	+	+
12	Rapid Sand,	2	0.68	30 minutes,	3.5	+	+	—	+	+
13	Rapid Sand,	5	2.90	3 hours,		—	—	—	+	+
14	Rapid Sand,	4	1.25	16 minutes,		+	+	—	+	+
15	Rapid Sand,	4	2.00	2 hours,		+	+	+	+	+
16	Rapid Sand,	10	5.00	1.9 hours,		+	+	+	+	+
17	Rapid Sand,	18	10.00	4 days,		+	+	—	+	+
18	Rapid Sand,	1	0.75	3.2 hours,	0.5	+	+	—	+	—
19	Pressure Rapid Sand,	2	1.00	1.1 hours,		+	+	+	+	+
20	Rapid Sand,	4	2.00	4 hours,	5.0	+	+	+	+	—
21	Pressure Rapid Sand,	3	3.25	3.1 hours,	2.5	—	+	+	+	+
22	Rapid Sand,	3	1.00	8 hours,	5.0	+	+	+	+	+
23	Rapid Sand,	4	1.40	10 minutes,	2.5	—	+	—	+	+
24	Rapid Sand,	1	0.50	None,		+	+	—	—	—
25	Rapid Sand,	1	0.35	3.2 hours,		+	+	+	+	+
26	Rapid Sand,	3	2.25	6.2 hours,	4.0	—	+	—	+	+
27	Rapid Sand,	4	3.20	3.1 hours,	5.5	+	+	—	+	+
28	Rapid Sand,	2	0.43	5.7 hours,	0.2	+	+	+	+	+
29	Rapid Sand,	1	0.04	19.7 hours,	4.6	—	—	—	—	+
30	Rapid Sand,	12	24.00	3.5 hours,	2.2	+	+	+	+	+
31	Rapid Sand,	1	0.11	3 hours,	6.0	+	+	—	+	+
32	Rapid Sand,	6	6.00	25 minutes,	1.0	+	+	+	+	+
33	Slow Sand,	2	0.50	None,		—	—	—	—	+
34	Rapid Sand,	4	2.00	2.3 hours,	5.0	+	+	—	+	+
35	Rapid Sand,	2	1.00	6.1 hours,	2.5	+	+	+	+	+
36	Rapid Sand,	2	1.00	4 hours,	2.0	+	+	+	+	+
37	Rapid Sand,	3	1.50	3.2 hours,	5.0	+	+	+	+	+
38	Rapid Sand,	2	0.25	7.9 hours,	1.5	+	+	+	+	+
39	Rapid Sand,	12	15.00	6.4 hours,	2.0	+	+	+	+	+
40	Rapid Sand,	2	0.03	None,	2.0	—	—	—	+	+
41	Rapid Sand,	2	1.00	2.5 hours,	1.7	+	+	+	+	+
42	Slow Sand,	2	0.07	7.9 days,		+	—	—	—	+
43	Rapid Sand,	4	2.00	2.0 hours,	2.0	+	+	—	+	+
44	Semi-Rapid Sand,	12	0.80	3.1 days,		—	—	—	—	+
45	Pressure Rapid Sand,	2	1.00	None,		—	+	—	+	+
46	Rapid Sand,	2	1.44	None,	3.5	—	+	—	+	+
47	Rapid Sand,	1	0.08	None,	15.0	+	+	—	+	+

IN PENNSYLVANIA, 1915—Continued.

Other Chemicals.	Analyses. Chemical. Partial.	Chemical. Complete.	Bacteriological.	Report on operation submitted.	Remarks.
Hydrated lime,	None,	None,	Occasional,	Monthly,	
None,	None,	None,	Bi-weekly,	Weekly,	Sedimentation in dam.
None,	Daily,	None,	Daily,	Weekly,	
None,	Daily,	None,	Daily,	Weekly,	
None,	Daily,	None,	Weekly,	Weekly,	Partial supply.
Hydrated lime,	Daily,	None,	Semi-weekly,	Weekly,	
None,	None,	None,	None,	None,	District population includes that of the Tarentum plant.
Sodium carbonate,	Daily,	None,	Daily,	Weekly,	
None,	None,	None,	Occasional,	Weekly,	
Hydrated lime,	Daily,	None,	Three a week,	Weekly,	Sedimentation in dam.
Hydrated lime,	Daily,	None,	Weekly,	Weekly,	
Sodium carbonate,	Daily,	None,	Semi-weekly,	Weekly,	Population varies. (Summer resort.)
None,	None,	None,	None,	None,	
None,	None,	Monthly,	Monthly,	None,	Sedimentation in dam.
Sodium carbonate,	Daily,	None,	Bi-weekly,	Monthly,	
Sulphate of iron, hydrated lime.	Daily,	None,	Occasional,	Weekly,	
None,	Daily,	None,	Weekly,	Weekly,	
Hydrated lime,	Daily,	None,	Occasional,	Weekly,	
None,	None,	None,	None,	Weekly,	
None,	Daily,	None,	Monthly,	Weekly,	
Hydrated lime,	Daily,	None,	Three a week,	Weekly,	Partial supply.
Copper sulphate, sodium thiosulphate.	Daily,	None,	Monthly,	Weekly,	
None,	Daily,	None,	Weekly,	Weekly,	
None,	None,	None,	None,	None,	Sedimentation in lake. Population varies. (Summer resort.)
None,	Daily,	None,	Monthly,	Weekly,	
Hydrated lime,	Daily,	None,	Semi-weekly,	Weekly,	
None,	Weekly,	None,	Weekly,	Weekly,	
None,	Daily,	None,	Monthly,	Weekly,	
None,	Monthly,	Monthly,	Monthly,	Weekly,	Partial supply.
None,	Daily,	Occasional,	Daily,	Weekly,	Sediment ation (33 hours) in Presque Isle Basin.
None,	None,	None,	None,	None,	
None,	Daily,	None,	Weekly,	Weekly,	
None,	None,	None,	None,	Weekly,	Sedimentation in dam.
Hydrated lime,	Daily,	None,	Weekly,	Weekly,	Partial supply.
None,	Daily,	None,	Weekly,	Weekly,	
None,	None,	None,	Weekly,	Weekly,	
Sodium carbonate,	Weekly,	None,	Weekly,	Weekly,	
None,	Daily,	None,	Weekly,	Weekly,	
Sodium carbonate,	Daily,	Weekly,	Daily,	Weekly,	
None,	Daily,	None,	None,	Weekly,	Partial supply. Not operated during 1915.
None,	Daily,	Occasional,	Weekly,	Weekly,	
None,	None,	None,	Occasional,	None,	Partial supply.
Hydrated lime,	Daily,	None,	Weekly,	Weekly,	
None,	None,	None,	None,	Weekly,	Filtered water mixed with equal quantity of unfiltered.
None,	None,	None,	None,	None,	Partial supply.
None,	Daily,	None,	Monthly,	Weekly,	
None,	None,	None,	None,	None,	Sedimentation in dam.

PUBLIC WATER FILTRATION PLANTS

No.	Type of Filter.	Number of units.	Rated capacity in million gallons daily.	Sedimentation basin period according to rated capacity.	Per cent. wash water.	Controller.	Filter to waste.	Loss of head gage.	Sulphate of alumina.	Chlorinated lime.
48	Rapid Sand,	1	0.06	2.5 hours,	1.0	+	+	—	+	+
49	Rapid Sand,	3	1.50	3 hours,	5.0	+	+	+	+	+
50	Rapid Sand,	3	3.00	5.5 hours,	2.0	+	+	+	+	+
51	Rapid Sand,	5	2.50	18 hours,	3.5	—	+	—	+	+
52	Semi-Rapid Sand,	15	9.00	1.7 hours,	1.5	—	+	+	+	+
53	Rapid Sand,	2	0.60	4 hours,	4.0	+	+	+	+	+
54	Rapid Sand,	6	3.60	14.6 hours,	1.5	+	+	+	+	+
55	Rapid Sand,	2	1.00	2.0 hours,	2.0	+	+	+	+	+
56	Rapid Sand,	6	6.00	9.2 hours,	0.4	+	+	+	+	+
57	Rapid Sand,	2	0.50	4.3 hours,		—	+	—	+	+
58	Rapid Sand,	2	0.33	6.7 hours,	5.0	+	+	+	+	+
59	Rapid Sand,	1	0.50	3.8 hours,	2.5	+	+	+	+	+
60	Pressure Rapid Sand,	2	1.00	50 minutes,		—	+	—	+	+
61	Rapid Sand,	2	1.00	2.2 hours,	1.0	+	+	+	+	+
62	Rapid Sand,	2	1.00	10 hours,	2.0	+	+	+	+	+
63	Rapid Sand,	4	2.00	50 minutes,	8.0	—	+	—	+	+
64	Rapid sand,	1	0.57	45 minutes,	5.0	+	+	+	+	+
65	Slow Sand,	2	0.30	None,		—	—	—	—	+
66	Rapid Sand,	3	0.75	2.2 hours,	3.0	+	+	—	+	+
67	Rapid Sand,	2	0.30	1 day,	2.0	+	+	—	+	+
68	Rapid Sand,	16	8.00	3 hours,	5.5	+	+	+	+	+
69	Rapid Sand,	4	1.50	3.2 hours,	4.0	+	+	+	+	+
70	Rapid Sand,	6	3.00	4 hours,	3.3	+	+	+	—	+
71	Rapid Sand,	1	0.28	1.7 hours,	3.0	+	+	+	+	+
72	Rapid Sand,	1	0.25	2.9 hours,	8.0	+	+	—	+	—
73	Rapid Sand,	8	4.00	1.3 hours,	2.0	+	+	+	+	+
74	Pressure Rapid Sand,	1	0.30	None,	1.5	—	+	+	+	+
75	Rapid Sand,	4	2.00	6 hours,	2.3	+	+	+	+	+
76	Rapid Sand,	1	0.15	3.4 hours,	5.0	+	+	+	+	+
77	Rapid Sand,	1	0.20	2 hours,	3.0	+	+	+	+	+
78	Slow Sand,	8	20.00	8 days,	0.2	+	+	+	—	—
79	Preliminary and Slow Sand,	5	12.00	1.2 days,	0.3	+	+	+	—	—
80	Preliminary and Slow Sand,	18	40.00	1.8 days,	0.4	+	+	+	—	—
81	Preliminary and Slow Sand,	65	240.00	None,	1.4	+	+	+	—	—
82	Preliminary and Slow Sand,	22	70.00	2.5 days,	0.4	—	+	—	+	—
83	Pressure Rapid Sand,	6	3.00	1 day,	2.0	+	+	—	+	—
84	Rapid Sand,	6	3.00	4 hours,	1.5	+	+	+	+	+
85	Slow Sand,	46	200.00	14 hours,		+	+	+	—	+
86	Rapid Sand,	6	4.00	3.5 hours,	4.0	+	+	—	+	+
87	Pressure Rapid Sand,	4	2.00	40 minutes,	1.5	+	+	+	+	+
88	Rapid Sand,	1	0.24	4 hours,	5.0	+	+	+	+	+
89	Slow Sand,	2	0.50	16 hours,		+	—	+	—	+
90	Slow Sand,	3	5.25	None,		+	—	+	—	+
91	Slow Sand,	6	4.50	3 hours,		+	—	+	—	+
92	Slow Sand,	10	15.00	None,		+	—	+	—	+
93	Slow Sand,	2	0.15	23.3 days,		+	—	+	—	—
94	Rapid Sand,	4	2.00	1.7 hours,		+	+	+	+	+
95	Rapid Sand,	3	1.25	1.0 hours,		—	+	—	+	+
96	Pressure Rapid Sand,	8	4.00	None,	20.0	—	—	—	+	+
97	Rapid Sand,	6	6.00	1.5 hours,	2.5	+	+	+	+	+
98	Rapid Sand,	8	4.00	3 hours,	9.6	+	+	—	+	+
99	Semi-Rapid Sand,	6	6.00	2 days,		—	+	+	+	+
100	Rapid Sand,	2	0.85	1.8 hours,	0.5	+	+	+	+	+
101	Rapid Sand,	14	14.00	7.4 hours,	2.0	+	+	+	+	+
102	Rapid Sand,	1	0.13	2.1		+	+	+	+	+
103	Pressure Rapid Sand,	4	2.00	2 days,		+	+	—	+	—
104	Rapid Sand,	6	2.40	2.5 days,		—	+	—	+	—

IN PENNSYLVANIA, 1915—Continued.

Other Chemicals.	Analyses. Chemical. Partial.	Chemical. Complete.	Bacteriological.	Report on operation submitted.	Remarks.
Sulphate of iron,	Occasional,	None,	Monthly,	Monthly,	
None,	Daily,	None,	Daily,	Weekly,	Partial supply.
Hydrated lime; sodium carbonate.	Daily,	None,	Weekly,	Weekly,	
None,	Daily,	None,	Weekly,	Weekly,	
Sodium carbonate,	None,	Weekly,	Daily,	Weekly,	
None,	Weekly,	None,	Weekly,	Weekly,	
Hydrated lime,	Daily,	None,	Semi-monthly,	Weekly,	
None,	Daily,	None,	Monthly,	Weekly,	
Hydrated lime, sulphate of iron, sodium carbonate.	Daily,	Occasional,	Daily,	Weekly,	
None,	Occasional,	None,	None,	Weekly,	
Sodium carbonate,	Daily,	None,	Occasional,	Weekly,	
None,	None,	None,	None,	Weekly,	
None,	Daily,	None,	Occasional,	Weekly,	Sedimentation in dam.
None,	Daily,	None,	Weekly,	Weekly,	
Sodium carbonate,	Daily,	None,	Bi-weekly,	Weekly,	
Hydrated lime,	Daily,	None,	Semi-weekly,	Weekly,	
None,	None,	None,	None,	Weekly,	Partial supply.
None,	Monthly,	None,	Monthly,	Weekly,	Partial supply.
Sodium carbonate,	Daily,	None,	Occasional,	Weekly,	Partial supply.
Hydrated lime,	Daily,	None,	Weekly,	Weekly,	Raw water averages 12 p. p. m. acidity.
Hydrated lime,	Daily,	None,	Daily,	Weekly,	
None,	None,	None,	Weekly,	Weekly,	
Hydrated lime,	Daily,	None,	Three a week,	Weekly,	
None,	None,	None,	None,	Weekly,	
None,	None,	None,	Weekly,	Weekly,	Partial supply. Not operated during 1915.
None,	Daily,	None,	Bi-weekly,	Monthly,	
None,	Semi-weekly,	None,	None,	Weekly,	Sedimentation in dam.
None,	Daily,	None,	Weekly,	Weekly,	
None,	None,	None,	Bi-weekly,	Monthly,	
None,	None,	None,	None,	Monthly,	Partial supply.
Chlorine gas,	Daily,	Bi-weekly,	Daily,	Weekly,	
Chlorine gas,	Daily,	Bi-weekly,	Daily,	Weekly,	
Chlorine gas,	Daily,	Bi-weekly,	Daily,	Weekly,	
Chlorine gas,	Daily,	Bi-weekly,	Daily,	Weekly,	
Chlorine gas,	Daily,	Bi-weekly,	Daily,	Weekly,	
None,	Daily,	None,	Three a week,	None,	
None,	Daily,	Weekly,	Semi-monthly,	Monthly,	
None,	Daily,	Weekly,	Daily,	Monthly,	
None,	None,	None,	Bi-weekly,	Weekly,	
None,	None,	None,	Monthly,	Weekly,	
None,	None,	None,	Occasional,	Monthly,	Partial supply. Not operated in 1915.
None,	Daily,	Weekly,	Daily,	Weekly,	
None,	Daily,	Weekly,	Daily,	Weekly,	
None,	Daily,	Weekly,	Daily,	Weekly,	
None,	Daily,	Weekly,	Daily,	Weekly,	Sedimentation dam contemplated.
None,	None,	None,	Semi-monthly,	None,	Sedimentation in dam.
None,	None,	None,	Monthly,	None,	
None,	Daily,	None,	None,	None,	
None,	Semi-weekly,	None,	Semi-weekly,	Monthly,	
None,	Daily,	Weekly,	Daily,	Weekly,	
Hydrated lime,	Daily,	None,	Monthly,	Weekly,	
None,	None,	None,	Bi-weekly,	Bi-weekly,	
None,	Weekly,	None,	Weekly,	Weekly,	
Hydrated lime,	Daily,	None,	Daily,	Weekly,	
None,	Daily,	None,	Bi-weekly,	Weekly,	Partial supply.
Chlorine gas,	Daily,	None,	Daily,	Weekly,	
Chlorine gas,	Daily,	None,	Daily,	Weekly,	

PUBLIC WATER FILTRATION PLANTS

No.	Type of Filter.	Number of units.	Rated capacity in million gallons daily.	Sedimentation basin period according to rated capacity.	Per cent. wash water.	Controller.	Filter to waste.	Loss of head gage.	Sulphate of alumina.	Chlorinated lime.
105	Slow Sand,	3	1.60	2.5 days,	------	+	—	—	+	—
106	Pressure Rapid Sand,	10	5.40	1.7 days,	------	+	+	+	+	—
107	Rapid Sand,	14	6.00	None,	------	—	+	—	+	+
108	Preliminary and Slow Sand,	3	4.50	20 minutes,	2.1	+	+	+	+	+
109	Rapid Sand,	8	4.00	15 minutes,	5.0	+	+	+	+	+
110	Rapid Sand,	2	1.60	1.4 hours,	2.0	+	+	+	+	+
111	Rapid Sand,	5	2.50	6 minutes,	5.0	+	+	—	—	—
112	Rapid Sand,	4	3.00	2.3 hours,	2.5	—	—	—	+	+
113	Rapid Sand,	6	3.00	3.6 hours,	10.0	+	+	+	+	+
114	Rapid Sand,	2	1.00	None,	------	—	—	—	+	+
115	Rapid Sand,	2	0.65	6.1 hours,	3.5	+	+	+	+	+
116	Rapid Sand,	1	0.13	7.7 hours,	1.0	+	+	+	+	—
117	Rapid Sand,	2	0.24	8.0 hours,	1.5	+	+	+	—	+
118	Rapid Sand,	2	0.50	3.2 hours,	2.0	+	+	+	+	+
119	Rapid Sand,	20	6.50	7.6 hours,	0.5	—	+	—	—	+
120	Rapid Sand,	12	4.70	None,	0.8	—	+	—	—	+
121	Rapid Sand,	10	10.00	40 minutes,	2.0	+	+	+	+	+
122	Rapid Sand,	1	0.14	4 hours,	1.2	+	+	+	+	—
123	Rapid Sand,	12	9.00	4.7 days,	0.5	+	+	+	+	+

IN PENNSYLVANIA, 1915—Continued.

Other Chemicals.	Analyses. Chemical. Partial.	Chemical. Complete.	Bacteriological.	Report on operation submitted.	Remarks.
Chlorine gas,	Daily,	None,	Daily,	Weekly,	
Chlorine gas,	Daily,	None,	Daily,	Weekly,	
None,	None,	None,	None,	None,	Sedimentation in dam. 500,000 gals. daily for industrial purposes.
Hydrated lime, chlorine gas.	Daily,	None,	Daily,	Monthly,	
None,	Daily,	None,	Daily,	Monthly,	Sedimentation in dam.
None,	Daily,	None,	Weekly,	Weekly,	
None,	None,	None,	Occasional,	None,	
None,	Daily,	None,	Daily,	Weekly,	
None,	None,	None,	Monthly,	None,	Sedimentation in dam.
None,	None,	None,	None,	None,	
None,	Weekly,	None,	Weekly,	Weekly,	
None,	None,	None,	Weekly,	Monthly,	
Iron sulphate; hydrated lime; sodium carbonate.	Daily,	None,	Bi-weekly,	Weekly,	
None,	Weekly,	None,	Monthly,	Weekly,	
None,	Weekly,	None,	Weekly,	Weekly,	Partial supply.
None,	Weekly,	None,	Weekly,	Weekly,	Peat-colored water; storage capacity of lake 275 days; partial supply.
None,	Daily,	None,	Daily,	Monthly,	
None,	Occasional,	Occasional,	Monthly,	Monthly,	Partial supply. Not operated in 1915.
None,	Daily,	Weekly,	Daily,	Weekly,	

INSTRUCTIVE INFORMATION CONCERNING WATER FILTRATION IN PENNSYLVANIA.

From the chart submitted it is noted that there are one hundred and twenty-three water filtration plants furnishing water to the public within the State of Pennsylvania. Owing to the large amount of rain during the past year, four of these plants were not operated.

In construction the one hundred and twenty-three plants are of the three following types:

Slow sand,	17
Semi-rapid sand,	3
Rapid sand,	103
Total,	123

The following table shows the rated capacity of and delivery from each type of plant:

Capacity,	17	slow sand plants,	616.37	mil. gals. or	68.23%
Capacity,	3	semi-rapid sand plants,	15.80	mil. gals. or	1.75%
Capacity,	103	rapid sand plants,	271.20	mil. gals. or	30.02%
Total capacity,	123	filtration plants,	903.37	mil. gals. or	100.00%
Delivery,	17	slow sand plants,	428.977	mil. gals. or	71.72%
Delivery,	3	semi-rapid sand plants,	12.097	mil. gals. or	2.02%
Delivery,	103	rapid sand plants,	157.094	mil. gals. or	26.26%
Total delivery,	123	filtration plants,	598.168	mil. gals. or	100.00%

The following table gives the number of filtration plants operated by companies, municipalities and public institutions with the million gallons rated capacity and the million gallons filtered by each group:

Operator.	Number of plants.	Rated capacity.	Per cent. of total capacity.	Million gallons filtered.	Per cent. of total filtered.
Company,	89	226.75	25.10	133.720	22.35
Municipality,	30	673.32	74.53	462.903	77.39
Public institutions,	4	3.30	.37	1.545	.26
Total,	123	903.37	100.00%	598.168	100.00%

During the year 1915, seven water filtration plants were placed in operation. The type of filter installed, by whom operated, rated capacity, delivery and percentage increase over 1914 is shown in the following table:

Kind of Filter.	Number of plants.	Operated by.			Rated capacity.	Per cent. total capacity increase over 1914.	Total delivery.	Per cent. delivery increase over 1914.
		Company.	Municipality.	Public institutions.				
Slow,	2	2			.22	.02	.099	.02
Rapid,	5	5			5.03	.56	2,613	.42
Total,	7	7			5.25	.58	2.712	.44

The population of the districts in which filter plants are operated is 3,960,600 or about 47.26% of the total population of the State, and approximately 65% of the urban and suburban population.

The population of the districts served by the three types of filters is as follows:

District population served by slow sand plants, ...2,265,800 or 57.21%
District population served by semi-rapid sand plants, ... 83,500 or 2.11%
District population served by rapid sand plants, ...1,611,300 or 40.68%

The number of people receiving filtered water, known as consumers, is 3,639,340 or 43.32% of the total population of the State, and approximately 62% of the urban and suburban population.

The consumers are served with filtered water from the three types of plants as follows:

Consumers served by slow sand plants, ...2,262,090 or 62.16%
Consumers served by semi-rapid sand plants, ... 79,000 or 2.17%
Consumers served by rapid sand plants, ...1,298,250 or 35.67%

The population of the districts served by the seven new filtration plants is 21,000. This is an increase over 1914 of .53%. The population receiving filtered water from the seven plants is 17,240, which is an increase over 1914 of .48%.

The type of plants operated by companies, municipalities and public institutions is shown in the following table:

Type.	Company.	Municipal.	Public institutions.	Total.
Slow sand,	5	12		17
Semi-rapid,	3			3
Rapid sand,	81	18	4	103
Total,	89	30	4	123

The district population served by the eighty-nine companies, thirty municipal and four institutional plants is as follows:

District population served by company slow sand plants, ...	13,000 or	.33%
District population served by company semi-rapid sand plants,	83,500 or	2.11%
District population served by company rapid sand plants, ...	1,317,200 or	33.25%
District population served by municipal slow sand plants, ...	2,252,800 or	56.88%
District population served by municipal semi-rapid sand plants,	none	
District population served by municipal rapid sand plants,...	289,800 or	7.32%
District population served by institutional slow sand plants,..	none	
District population served by institutional semi-rapid sand plants, ...	none	
District population served by institutional rapid sand plants,.	4,300 or	.11%
Company plants serve a district population of, ...	1,413,700 or	35.69%
Municipal plants serve a district population of, ...	2,542,600 or	64.20%
Public institutional plants serve a district population of, ...	4,300 or	.11%

The number of consumers receiving filtered water from the three types of municipal, company and institutional water filtration plants is as follows:

Consumers served by company slow sand plants, ...	10,690 or	.29%
Consumers served by company semi-rapid sand plants, ...	79,000 or	2.17%
Consumers served by company rapid sand plants, ...	1,026,150 or	28.20%
Consumers served by municipal slow sand plants, ...	2,251,400 or	61.86%
Consumers served by municipal semi-rapid sand plants, ...	none	
Consumers served by municipal rapid sand plants, ...	267,800 or	7.36%
Consumers served by institutional slow sand plants, ...	none	
Consumers served by institutional semi-rapid sand plants, ...	none	
Consumers served by institutional rapid sand plants, ...	4,300 or	.12%

Company plants serve 1,115,840 consumers or 30.66% of the total number receiving filtered water. Municipal plants serve 2,519,200 or 69.22%. Public institutional plants serve 4,300 or .12%.

The source of water supply and the number of company, municipal and institutional plants using each source are designated in the following table:

Source.	Company.	Municipal.	Institutional.	Total.
Rivers,	36	14	2	52
Small streams,	41	13	2	56
Rivers and small streams,	3			3
Small streams and wells,		1		1
River and springs,	1			1
Small streams and springs,	1	1		2
Lakes,	3	1		4
Wells,	4			4
Total,	89	30	4	123
Surface water only,	83	28	4	115
Ground water only,	4			4
Combined surface and ground water,	2	2		4
Total,	89	30	4	123

The sources of water supply for the district population receiving filtered water from company, municipal and institutional plants are shown in the following table:

Sources.	Company.	Municipal.	Institutional.	Total.
Rivers,	581,450	2,303,200	2,700	2,887,350
Small streams,	561,750	140,400	1,600	703,750
Rivers and small streams,	51,000			51,000
Small stream and wells,		11,000		11,000
River and springs,	8,100			8,100
Small streams and springs,	5,000	3,000		8,000
Lakes,	180,800	85,000		265,800
Wells,	25,600			25,600
Total,	1,413,700	2,542,600	4,300	3,960,600

In the following table are shown the nature of the sources of supply used by each of the three types of filtration plants, and the district population and number of consumers:

Source of Supply and Type of Plant.	Number of plants.	District population.	Consumers.
Slow sand plants using surface water only,	17	2,265,800	2,262,090
Slow sand plants using ground water only,			
Slow sand plants using combined surface and ground water,			
Semi-rapid sand plants using surface water only,	3	83,500	79,000
Semi-rapid sand plants using ground water only,			
Semi-rapid sand plants using combined surface and ground water,			
Rapid sand plants using surface water only,	95	1,558,600	1,249,750
Rapid sand plants using ground water only,	4	25,600	24,500
Rapid sand plants using combined surface and ground water,	4	27,100	24,000
Total,	123	3,960,600	3,639,340

SEWAGE TREATMENT PLANTS.

There were one hundred and twelve sewage treatment plants in operation within the State in 1915. An inspection was made of sixty-nine of these plants. The inspections were made in order to investi-

gate the efficiency, to check the operation and construction as following the requirements of the Department and the designs submitted to and revised by it, and to form the basis of recommendations for modification when needed.

In the following table are given the name and location of each of the one hundred and twelve plants in operation, together with the method of treatment, year placed in operation, number of gallons treated each twenty-four hours and the body of water receiving effluent.

SEWAGE TREATMENT PLANTS IN PENNSYLVANIA, 1915.

No.	Name and Location.	Method of Treatment.	Year placed in operation.	Gals. treated per 24 hours.	Body of Water Receiving Effluent.
1	Allegheny County Work House, O'Hara Township,	Septic tank, sprinkling filter, re-settling basin and sludge bed.	1908	40,000	Allegheny River.
2	Altoona City, Blair County,	Screens and irrigation,	1897	1,500,000	Juniata River.
3	American Glue Company, Springdale, Allegheny County.	Settling tanks and sludge bed,	1906	100,000	Allegheny River.
4	Bethany Orphans' Home, Heidelberg Township, Berks County.	Septic tank, sprinkling filter, re-settling basin, chlorinated lime and sludge bed.	1913	20,000	Tulpehocken Creek, Schuylkill River watershed.
5	Blaw Steel Construction Company, O'Hara Township, Allegheny County.	Septic tank, contact beds, sludge bed and chlorinated lime.	1912	29,600	Allegheny River.
6	Bradford County Home, Burlington, West Burlington Township.	Screens, Imhoff tank, sub-soil irrigation and sludge bed.	1915	10,000	No effluent. Sugar Creek, North Branch Susquehanna River watershed.
7	Bristol Borough, Bucks County,	Screens, settling tanks, contact beds, chlorinated lime, re-settling basins and sludge bed.	1915	750,000	Delaware River.
8	Brittain, A. R., et al., East Stroudsburg, Monroe County.	Septic tanks and contact beds,	1911	30,000	Brodhead Creek, Delaware River watershed.
9	Bryn Athyn Village Association, Bryn Athyn, Moreland Township, Montgomery County.	Septic tank, primary and secondary contact beds, sand filters and sludge bed.	1909	62,000	Pennypack Creek, Delaware River watershed.
10	Buck Hill Falls Company, Buck Hill Falls, Barrett Township, Monroe County.	Septic tanks, sludge digestion chamber, sprinkling filters, sand filters, re-settling basin and sludge bed.	1912	50,000	Buck Hill Creek, Delaware River watershed.
11	Buckwood Inn, Shawnee-on-Delaware, Monroe County.	Septic tanks and contact beds,	1911	35,000	Delaware River.
12	Burn Brae Hospital, Upper Darby Township, Delaware County.	Imhoff tank, sprinkling filter and re-settling basin,	1915	5,000	Tributary Darby Creek, Delaware River watershed.

SEWAGE TREATMENT PLANTS IN PENNSYLVANIA, 1915—Continued.

No.	Name and Location.	Method of Treatment.	Year placed in operation.	Gals. treated per 24 hours.	Body of Water Receiving Effluent.
13	Cairnbrook Village, Shade Township, Somerset County, Loyalhanna Coal and Coke Company.	Screens, Imhoff tank, contact beds, chlorinated lime, re-settling basin and sludge bed.	1915	7,000	Shade Creek, Kiskiminitas River watershed.
14	Carlisle Borough, Cumberland County,	Screens, septic tanks, primary and secondary contact beds and sludge bed.	1914	300,000	Letort Spring Run, Susquehanna River watershed.
15	Carnegie Steel Company, Greenville, Mercer County,	Septic tank, contact bed and sludge bed,	1913	12,000	Shenango River, Beaver River watershed.
16	Carpenter Steel Company, Reading, Berks County,	Imhoff tank, sprnkling filter and sludge bed,	1914	36,500	Schuylkill River.
17	Chambersburg Borough, Franklin County,	Imhoff tanks, sprinkling filters, re-settling basins and sludge bed.	1912	600,000	Conocheague Creek, Potomac River watershed.
18	Chester County Home and Hospital for Insane, West Bradford Township.	Imhoff tank, sprinkling filter, re-settling basin and chlorinated lime.	1913	17,000	Tributary to Brandywine Creek, Delaware River watershed.
19	Cheyney Training School for Teachers, Cheyney, Delaware County.	Screens, Imhoff tank, sprinkling filter, re-settling basin, chlorinated lime and sludge bed.	1915	10,000	Taylor Run, Delaware River watershed.
20	Chester Springs Soldiers' Orphans' School, Chester County.	Septic tank and percolating filters,	1909	Not operating.	Pickering Creek, Schuylkill River watershed.
21	Collier Land Company, Collier Township, Allegheny County.	Screens, settling tank and sludge bed,	1913	1,500	Chartiers Creek, Ohio River watershed.
22	Cressman, Philip, Perkasie and Sellersville Boroughs, Bucks County.	Settling tanks, contact beds and chlorinated lime,	1910	150,000	Tributary to Perkiomen Creek, Schuylkill River watershed.
23	Dermady Sanatorium, Morton, Delaware County,	Septic tank and sprinkling filter,	1906	5,500	Tributary to Crum Creek, Delaware River watershed.
24	Derry Borough, Westmoreland County,	Septic tanks, contact beds and sludge bed,	1911	300,000	McGee Run, Kiskiminitas River watershed.

25	Devon Drainage Company, Devon, Chester County,	Settling tanks and irrigation,	1905	25,000	Upper Darby Creek, Delaware River watershed.
26	Dixmont Hospital for Insane, Dixmont, Allegheny County.	Screens, septic tanks, sprinkling filters, re-settling basins and sludge bed.	1908	84,000	Hospital Run, Ohio River watershed.
27	Dormont Borough (3 plants), Allegheny County,	Septic tanks and contact beds,	1911	170,000	Saw Mill Run, Monongahela River watershed.
28	Doylestown Sewerage Company, Doylestown, Bucks County.	Septic tanks, contact beds, re-settling basin and chlorinated lime.	1911	300,000	Cook's Run, Delaware River watershed.
29	Eagleville Sanatorium for Consumptives, Eagleville, Montgomery County.	Septic tank, contact beds, irrigation and chlorinated lime.	1912	10,000	Skippack Creek, Schuylkill River watershed.
30	Eastern Pennsylvania State Institution for Feeble-Minded and Epileptic, Spring City, East Vincent Township, Chester County.	Septic tanks, sand filters, sludge bed and irrigation field.	1908	175,000	Schuylkill River.
31	Ebensburg Borough, Cambria County,	Screens, Imhoff tanks, sprinkling filter, re-settling basin and sludge bed.	1915	500,000	Tributary North Branch Conemaugh River, Kiskiminetas watershed.
32	Elk County Home and Asylum, Bensinger Township.	Settling tanks and chlorinated lime,	1915	7,000	K Fork of West Creek, West Branch Susquehanna River watershed.
33	Enola Realty Company, Enola, Cumberland County.	Septic tanks and contact beds,	1905	35,000	Susquehanna River.
34	Flannery Bolt Company, Collier Township, Allegheny County.	Settling tanks and chlorinated lime,	1913	10,000	Chartiers Creek, Ohio River watershed.
35	Free Hospital for Poor Consumptives, White Haven, Luzerne County (2 plants).	1—septic tanks, stone filters, subsurface irrigation and sludge beds.	1904	5,000	No outlet. Lehigh River watershed.
		2—septic tanks, stone filters, sand filters and subsurface irrigation.	1910	12,000	No outlet. Lehigh River watershed.
36	Galen Mountain Company, South Heidelberg Township, Berks County.	Screens, settling tanks, Imhoff tanks, sprinkling filters, re-settling basin, sludge bed and chlorinated lime.	1915	30,000	Tributary to Cocalico Creek, Susquehanna River watershed.
37	Glen Mills Schools (Boys' Dept.), Glen Mills, Thornbury Township, Delaware County.	Settling tanks, contact beds, subsurface irrigation and chlorinated lime.	1913	84,000	Tributary to Chester Creek, Delaware River watershed.
38	Glen Mills Schools (Girls' Dept.), Darling, Middletown Township, Delaware County.	Septic tank, contact beds, sand filters and chlorinated lime.	1909	38,000	Rocky Creek, Delaware River watershed.
39	Hanover Sewer Company, Hanover, York County,	Septic tank, contact beds and chlorinated lime,	1903	217,000	Forney's Run, Susquehanna River watershed.

SEWAGE TREATMENT PLANTS IN PENNSYLVANIA, 1915—Continued.

No.	Name and Location.	Method of Treatment.	Year placed in operation.	Gals. treated per 24 hours.	Body of Water Receiving Effluent.
40	Haverford College, Haverford Township, Delaware County.	Septic tanks, contact beds and sand filters,	1908	11,000	Branch of Cobb's Creek, Delaware River watershed.
41	Home and Hospital of the Good Shepherd, Rosemont, Delaware County.	Settling tank, percolating filter, sludge bed and chlorinated lime.	1902	2,400	Valley Run, Delaware River watershed.
42	Homoeopathic State Hospital for the Insane, Hanover Township, Lehigh County.	Septic tanks, aerator, sand beds, sludge bed and chlorinated lime.	1912	220,000	Lehigh River.
43	House of Employment of Delaware County, Lima, Middletown Township.	Imhoff tank, sprinkling filter, sludge bed and sand filters.	1912	10,000	Tributary to Chester Creek, Delaware River watershed.
44	Indiana Borough, Indiana County,	Screens, septic tanks, sprinkling filters, re-settling basin and sludge bed.	1912	657,000	Two Lick Creek, Kiskiminetas River watershed.
45	Kingsley House Association, Valencia, Butler County.	Screens, modified Imhoff tank, sand filters and sludge bed.	1915	7,500	Breakneck Creek, Beaver River watershed.
46	Lansdale Borough, Montgomery County,	Settling tanks and chlorinated lime,	1914	75,000	Tributary Neshaminy Creek, Delaware River watershed.
47	Lansdowne Park, South Abington Township, Leckawanna County.	Septic tank, subsurface irrigation,	1915	2,000	Leggett Creek, Lackawanna River watershed.
48	Lebanon City, Lebanon County,	Screens, Imhoff tank, sprinkling filters, re-settling basin, sludge bed and chlorinated lime.	1913	856,000	Quittapahilla Creek, Susquehanna River watershed.
49	Lehigh County Home and Almshouse, South Whitehall Township.	Grit chamber, septic tank, primary and secondary contact beds, re-settling basin, sludge bed and chlorinated lime.	1911	49,000	Cedar Creek, Lehigh River watershed.
50	Ligonier Borough, Westmoreland County,	Imhoff tank, sprinkling filter, re-settling tank and sludge bed.	1914	50,000	Loyalhanna Creek, Kiskiminitas River watershed.

51	Mahoning and Shenango Railway and Light Company, Cascade Park, Shenango Township, Lawrence County.	Septic tank and sand filter,	1907	15,000	Big Run, Beaver River watershed.
52	Mars Borough, Butler County,	Screens, septic tank and chlorinated lime,	1915	75,000	Breakneck Creek, Beaver River watershed.
53	Masonic Homes of Peinnsylvania, West Donegal Township, Lancaster County.	Screens, modified septic tanks, rapid sand filters, sludge drier and chlorinated lime.	1913	24,000	Conoy Creek, Susquehanna River watershed.
54	Middle Coal Field Poor District, Lehigh Township, Carbon County.	Septic tanks, sand filters and sludge bed,	1914	27,000	Rapp's Run, Lehigh River watershed.
55	Montgomery County Home for the Poor, Upper Providence Township.	Settling tank, contact beds, re-settling basin, sludge bed and chlorinated lime.	1911	20,000	Tributary to Schuylkill River.
56	Montrose Borough, Susquehanna County,	Screens, Imhoff tank, chlorinated lime, re-settling basin and sludge bed.	1915	350,000	Tributary East Branch Wyalusing Creek, North Branch Susquehanna River watershed.
57	Mount Gretna Park, South Londonderry Township, Lebanon County.	Modified Imhoff tank, sprinkling filters, sand filters, re-settling basin and sludge bed.	1911	60,000	Conewago Creek, Susquehanna River watershed.
58	Mount Lebanon Township, Allegheny County (2 plants).	Septic tanks and sludge bed,	1914	400,000	1—Big Saw Mill Run, Monongahela River watershed. 2—Painter's Creek, Ohio River watershed.
59	Nazareth Sewerage Company, Nazareth, Northampton County.	Septic tanks and chlorinated lime,	1913	25,000	Bushkill Creek, Delaware River watershed.
60	Nelson Valve Company, Springfield Township, Montgomery County.	Septic tank and cinder filter,	1910	25,000	Tributary to Wissahickon Creek, Schuylkill River watershed.
61	New Jersey Zinc Company, Palmerton, Carbon County.	Screens and sand filters,	1908	106,000	Lehigh River.
62	New Wilmington Borough, Lawrence County,	Grit chamber, septic tanks, sand filters and sludge bed.	1910	60,000	Little Neshannock Creek, Beaver River watershed.
63	North Wales Borough, Montgomery County,	Screens, Imhoff tank, sprinkling filter, re-settling basin, sludge bed and chlorine gas.	1915	60,000	Wissahickon Creek, Schuylkill River watershed.
64	Northwestern Anti-Tuberculosis League, Bells Camp, Foster Township, McKean County.	Septic tank, contact bed and sludge bed,	1911	8,000	Foster Brook, Allegheny River watershed.

SEWAGE TREATMENT PLANTS IN PENNSYLVANIA, 1915—Continued.

No.	Name and Location.	Method of Treatment.	Year placed in operation.	Gals. treated per 24 hours.	Body of Water Receiving Effluent.
65	Norwich Lumber Company, Norwich Township, McKean County.	Septic tank and sand filters,	1912	75,000	East Branch Potato Creek, Allegheny River watershed.
66	Oakdale Borough, Allegheny County,	Screens, septic tanks, chlorinated lime and sludge bed,	1915	20,000	Robins Run, Ohio River watershed.
67	Palmerton Disposal Company, Palmerton, Carbon County.	Screens, septic tank and sand filters,	1900	75,000	Aquashicola Creek, Lehigh River watershed.
68	Paradise Protectory, Paradise Township, York County.	Septic tanks, contact filter and subsurface irrigation,	1911	4,000	Tributary to Beaver Creek, Susquehanna River watershed.
69	Parkside Hotel, Willow Grove, Moreland Township, Montgomery County.	Septic tank, sprinkling filter, re-settling basin and chlorinated lime.	1898	3,100	Tributary to Pennypack Creek, Delaware River watershed.
70	Pennsylvania Soldiers' Orphans' Industrial School, Scotland, Franklin County.	Settling tank and irrigation,	1895	50,000	Conocheague Creek, Potomac River watershed.
71	Pennsylvania State College, Centre County,	Imhoff tank, sprinkling filter, re-settling basin, sludge bed and chlorinated lime.	1915	135,000	Stab Cabin Run, West Branch Susquehanna River watershed.
72	Pennsylvania State Lunatic Hospital, Harrisburg, Dauphin County.	Settling tanks, sprinkling filter, re-settling basin and sludge bed.	1911	440,000	Asylum Run, Susquehanna River watershed.
73	Pennsylvania State Sanatorium for Tuberculosis Number 1, Mont Alto, Franklin County.	Septic tanks, sprinkling filter, sand filters, sludge bed and chlorinated lime.	1908	200,000	Rocky Mountain Creek, Potomac River watershed.
74	Pennsylvania State Sanatorium for Tuberculosis Number 2, Cresson, Cambria County.	Screens, Imhoff tanks, sprinkling filters, re-settling basins, sludge bed and chlorinated lime.	1912	53,000	Bradley Run, West Branch Susquehanna River watershed.
75	Pennsylvnaia State Sanatorium for Tuberculosis Number 3, Hamburg, Berks County.	Screens, Imhoff tanks, sprinkling filters, re-settling basins, sand filter, sludge bed and chlorinated lime.	1914	79,000	Mill Creek, Schuylkill River watershed.

76	Pennsylvania Training School, Morganza, Washington County.	Septic tanks, sprinkling filters, re-settling basin, sand filters and sludge bed.	1912	52,000	Chartiers Creek, Ohio River watershed.
77	Pennsylvania Training School for Feeble-Minded Children, Elwyn, Middletown Township, Delaware County.	Screens, Imhoff tanks, sprinkling filters, re-settling basins, sludge bed and chlorinated lime.	1915	250,000	Ridley Creek, Delaware River watershed.
78	Perkiomen Seminary, Pennsburg, Montgomery County.	Settling tanks, contact beds, re-settling basins and chlorinated lime.	1908	10,000	Tributary to Perkiomen Creek, Schuylkill River watershed.
79	Philadelphia City, Pennypack Creek district, ----	Screens, Imhoff tanks, sprinkling filters, re-settling basin, sludge beds and chlorinated lime.	1912	1,250,000	Pennypack Creek, Delaware River watershed.
80	Philadelphia Rapid Transit Company, Willow Grove Park, Moreland Township, Montgomery County.	Septic tanks, contact filters, sand filters, aerator, re-settling basin and chlorinated lime.	1906	200,000	Tributary to Pennypack Creek, Delaware River watershed.
81	Pittsburgh North Side City Home, O'Hara Township, Allegheny County.	Septic tanks, sprinkling filters, re-settling basin and sludge bed.	1908	100,000	Allegheny River.
82	Pittsburgh Water Works Department, Aspinwall Filter Plant, O'Hara Township, Allegheny County.	Septic tanks and sand filters, ----------	1907	10,000	Allegheny River.
83	Pleasantville Borough, Venango County, ----------	Imhoff tank, percolating filter, sand filter, re-settling basin and sludge bed.	1913	24,000	West Pithole Creek, Allegheny River watershed.
84	Reading City, Berks County, ----------	Screens, settling tanks, sprinkling filters, re-settling basin and sludge beds.	1907	5,800,000	Schuylkill River.
85	Rush Hospital, Country Branch, Willistown Township, Chester County.	Settling tank, contact bed and sand filter, ----------	1911	5,000	Crum Creek, Delaware River watershed.
86	Saint Francis Industrial School, Eddington, Bensalem Township, Bucks County.	Modified Imhoff tank, sand filters and sludge bed, ---	1912	25,000	Tributary to Neshaminy Creek, Delaware River watershed.
87	Saint Mary's Laundry, Haverford Township, Delaware County.	Settling tanks and chlorinated lime, ----------	1910	20,000	Cobb's Creek, Delaware River watershed.
88	Schuylkill County Home and Hospital, North Manheim Township.	Settling tanks, contact beds, sand filters, sludge bed and chlorinated lime.	1911	160,000	Tributary to Schuylkill River.
89	Scranton Poor District, Hillside Home, Newton Township, Lackawanna County.	Imhoff tank, sprinkling filter, re-settling basin, sludge bed and chlorinated lime.	1914	100,000	Tributary of Falls Creek, North Branch Susquehanna River watershed.
90	Seybert Institution, Meadowbrook, Abington Township, Montgomery County.	Imhoff tank, sprinkling filter, re-settling basin, sludge bed and chlorinated lime.	1913	8,000	Meadowbrook Creek, Delaware River watershed.

SEWAGE TREATMENT PLANTS IN PENNSYLVANIA, 1915—Continued.

No.	Name and Location.	Method of Treatment.	Year placed in operation.	Gals. treated per 24 hours.	Body of Water Receiving Effluent.
91	Somerset County Home and Hospital, Somerset Township.	Settling tanks, sand filters and sludge bed,	1913	30,000	Coxes Run, Youghiogheny River watershed.
92	State Asylum for the Chronic Insane of Pennsylvania, Wernersville, Berks County.	Septic tanks, sprinkling filters, re-settling basin, sludge bed and chlorinated lime.	1910	150,000	Spring Creek, Schuylkill River watershed.
93	State Hospital for the Criminal Insane, Farview, Wayne County.	Settling tank and patented disinfectant,	1913	30,000	Tributary of Lackawaxen Creek, Delaware River watershed.
94	State Hospital for the Insane, Danville, Montour County.	Screens, septic tanks, sprinking filters, re-settling basin, sludge bed and chlorinated lime.	1909	425,000	North Branch of Susquehanna River.
95	State Hospital for the Inasne, Warren, Warren County.	Screens, Imhoff tank, sprinkling filters, re-settling basin, sludge bed and chlorinated lime.	1914	150,000	Tributary to Allegheny River.
96	State Hospital for the Insane, Southeastern District, Norristown, Montgomery County.	Screens, settling tank, sprinkling filters, re-settling basin, sludge bed and chlorinated lime.	1911	200,000	Stony Creek, Schuylkill River watershed.
97	State Institution for Feeble-Minded of Western Pennsylvania, Polk, Venango County.	Septic tanks, sprinkling filters, sludge bed, re-settling basin and chlorinated lime.	1911	325,000	Little Sandy Creek, Allegheny River watershed.
98	Tressler Orphans' Home, Loysville, Tyrone Township, Perry County.	Septic tank and contact beds,	1900	20,000	Sherman's Creek, Susquehanna River watershed.
99	Troy Borough, Bradford County,	Screens, Imhoff tank, chlorinated lime and sludge bed,	1915	100,000	Sugar Creek, North Branch Susquehanna River watershed.
100	Universal Portland Cement Company, Universal, Penn Township, Allegheny County.	Grit chamber, septic tank, contact beds and sludge bed.	1913	9,000	Tributary of Turtle Creek, Monongahela River watershed.
101	Valley Camp Association, Lower Burrell Township, Westmoreland County.	Settling tanks and chlorinated lime,	1911	20 000	Allegheny River via Arnold Borough sewer system.

102	Villa Maria Academy, Frazer, East Whiteland Township, Chester County.	Septic tank, primary contact bed and secondary contact bed.	1914	16,000	Tributary to Chester Creek, Delaware River watershed.
103	Villanova College, Villanova, Radnor Township, Delaware County.	Settling tank, contact beds and sludge bed,	1910	10,000	Mill Creek, Schuylkill River watershed.
104	Vulcanized Rubber Company, Morrisville, Bucks County.	Settling tank, cinder filter and sludge bed,	1910	25,000	Delaware River.
105	Walter Sanatarium, South Heidelberg Township, Berks County.	Imhoff tanks, sprinkling filter, re-settling basins, sludge bed and chlorinated lime.	1911	40,000	Tulpehocken Creek, Schuylkill River watershed.
106	Warren Water Company, Filter Plant, Glade Township, Warren County.	Settling tank and sand filter,	1909	150	Allegheny River.
107	Washington and East Washington Boroughs, Washington County.	Screens, settling tank, septic tanks, sprinkling filters, sludge bed and re-settling basins.	1909	1,750,000	Chartiers Creek, Ohio River watershed.
108	Wayne Sewerage Company, Wayne, Radnor Township, Delaware County.	Septic tanks, sand filters and chlorinated lime,	1908	325,000	Ithan Creek, Delaware River watershed.
109	West Chester Borough, Chester County (2 plants).	Screens, septic tanks, sprinkling filters, re-settling basins, sludge bed and chlorine gas.	1-1912 1-1913	200,000 225,000	Taylor Run and Goose Creek, both on Delaware River watershed.
110	Williamson Free School of Mechanical Trades, Middletown Township, Delaware County (2 plants).	Septic tank, contact beds and sand filters,	1908	35,000	Both tributary of Chester Creek, Delaware River watershed.
111	Winters, E. Elizabeth, Sanatorium, Lower Merion Township, Montgomery County.	Screens, septic tank, sprinkling filter and chlorinated lime.	1912	6,000	Arrowneck Creek, Schuylkill River watershed.
112	Wood, Alan, Iron and Steel Company, Ivy Rock Station, Plymouth Township, Montgomery County.	1—settling tank and contact bed, 2—septic tanks and contact beds,	1913 1911	5,000 4,000	Both to Plymouth Creek, Schuylkill River watershed.

WATER SAMPLE COLLECTIONS.

There have been received during the year the results of bacteriological examinations of 6,929 samples collected in water sampling outfits sent out by the Department's laboratory on requisitions from this section. The samples were collected by Department officers, State insitutions and individuals. In the following table is shown the number of results received each month from samples collected as stated above:

1915.	Department Officers.	State Institutions.	Individuals.	Totals.
January,	121	217	65	403
February,	83	217	28	328
March,	148	232	51	431
April,	185	227	18	430
May,	276	257	28	561
June,	273	216	39	528
July,	229	206	67	502
August,	223	212	58	493
September,	483	234	42	759
October,	784	268	66	1,118
November,	537	194	32	763
December,	381	198	34	613
Total,	3,723	2,678	528	6,929

Sample collections by Department officers were made principally during typhoid fever investigations and water works examinations. Samples received from State institutions were usually to show the efficiency of water and sewage treatment plants operated by such institutions. Collections made by individuals were in almost every instance by those using water from individual water supplies suspected of having caused typhoid fever or some other water-borne disease.

13. SPECIAL WORK.

During the year 1915 the Division of Sanitary Engineering has given attention to a number of special subjects, among which are those briefly outlined in the following paragraphs.

Separate condensed summaries are given herewith of the work done by the Department in connection with the following subjects: The Erie flood disaster, complaints regarding the taste and odor of the Allegheny River water at New Kensington, an industrial waste survey of the Clarion River basin, the operation by the Department of the filtration plant of the Armstrong Water Company at Kittanning, the elimination of gas works waste from the Schuylkill River and its

tributaries, storm damage investigations, and the inspection of the water supplies of the National Guard Encampment Grounds at Mount Gretna.

The inspection of fair grounds, summer resorts, campmeeting grounds, amusement and picnic parks as well as lumber, construction and other camps constituting menaces to the purity of the waters of the State was continued and extended beyond the work done in previous years along this line. This work is summarized in that section of this report covering Field Inspection.

ERIE FLOOD DISASTER.

A flood in the valley of Mill Creek in Erie consequent upon a storm with a maximum rainfall intensity of 4.04 inches in three hours on the afternoon of August 3, resulted in the loss of thirty-four human lives and $2,000,000 worth of property and led to a request on the following day from the municipal authorities for assistance from this Department in order that proper preventive measures might be taken against the outbreak of disease.

The Chief Engineer of the Department and Assistant Engineers Moses and Parke left Harrisburg that evening. The end of the trip from Corry was made by automobile because of the destruction of railroad tracks by the storm. The party reached Erie about noon August 5, and reported to Mayor J. W. Stern and City Health Officer Dr. J. W. Wright. The city council passed a resolution thanking the State for its cooperation. The Commissioner of Health kept informed of the situation by telephone and gave such instructions as were necessary for the direction of the work of the Department.

GENERAL DESCRIPTION.

The city of Erie has a population of 68,000 and is the metropolis of northwestern Pennsylvania. It lies along the southern shore of Lake Erie at the lower or eastern end. Presque Isle, a crescent-shaped peninsula, completely landlocks a bay of seven square miles except for a channel 350 feet wide which is close to the mainland at the eastern end of the bay and forms the entrance to the harbor.

The municipal territory abuts on the bay and the lake, extending about two miles to the west along the bay from the harbor inlet and along the lake front about one mile to the east. The depth of the city from the northern to the southern boundary is about two and one-quarter miles. There is a bluff some fifty feet in height along the water front and back from this the land rises gradually to an elevation approximately two hundred feet above the lake level. South of the city in the township the land continues to rise, reaching an eleva-

tion of five hundred and fifty feet above the lake at a point some five miles inland.

The municipal territory is traversed by five gullies or ravines formed by streams emptying into the bay and lake. From east to west these streams are as follows: Light House Run and Garrison Run, emptying into the lake east of the bay, and Mill Creek, Little Cascade Run and Cascade Creek, discharging into the bay.

Mill Creek is the most important of the streams traversing the city and has a drainage area of approximately thirteen square miles. It rises about three miles southeast of the municipal territory, flows westward four miles and then turns abruptly to the north and after a course of two miles enters the city near the middle of the southern boundary. Within the city limits it follows a general northeasterly direction and has a total fall of 187 feet at a rate of nearly seventy feet per mile. In the township south of the city the watershed consists of a sandy, gravelly soil typical of this glaciated region and is underlain at a slight depth by a gray slate formation, exposed in many places in the bed of the stream. Most of the area, both valley and hillsides, is under cultivation and contains numerous buildings. The hillsides are rather steep, especially just south of the city limits where the stream passes through a narrow gorge for about two miles. The average slope of the stream above the city is about forty-seven feet per mile, approximately two-thirds of that within the city.

Mill Creek within the city limits is confined to a narrow channel by buildings and retaining walls constructed at intervals along its course and encroaching upon the natural ravine. In addition it is spanned by twenty-six highway railroad bridges and culverts, mostly of the semi-circular arch type of brick and concrete construction.

Water is supplied throughout the city by the municipal water works. The intake is in Lake Erie at a point some 1,500 feet out from the northern shore of Presque Isle. Water passes by gravity through large sedimentation basins on the island and then through conduits under the bay to the low service pumps of a modern filtration plant situated on the mainland at the foot of the bluff at a point about one mile west of the mouth of Mill Creek. The filters were completed during 1914 under permits issued by this Department.

Most of the city is provided with sewers discharging directly into the lake or into an intercepting sewer constructed along the bank of Mill Creek. Several permits relative to sewerage have been issued to the city, requiring the separation of the sanitary sewage from the storm water and the construction of a sewage treatment plant which will be located on a level tract of ground just east of the mouth of Mill Creek. The city is now engaged in the work of rebuilding sewers to bring about the separation of the storm water and sewage preparatory to the construction of the treatment works.

FLOOD.

The flood was the result of a rainfall of unusual intensity which occurred August 2 and 3 and which apparently was centered on the watershed of Mill Creek, along which the greatest damage occurred, although some was caused in the valley of Four Mile Creek east of the city, and a slight amount in the valley of Cascade Run at the western city boundary. The topography of the Mill Creek drainage area favors a rapid run-off. The effect of the flood flow was increased by encroaching walls and buildings and by bridges and small culverts and also by the lodgment of trees and debris, and the water spread beyond the banks of the stream.

There have been other, though less extensive, floods, notably on September 10, 1878, and May 16-17, 1893. The United States Weather Bureau at Erie recorded a precipitation of 6.01 inches in 48 hours during the 1893 flood and a precipitation of 5.77 inches in 24 hours, culminating in the August, 1915, flood. Although the total precipitation of the 1893 flood was somewhat the greater, the maximum intensity of rainfall was much greater in 1915, being 4.04 inches in three hours as against 4.17 in twenty-three hours in 1893. The intensities of rainfall in different intervals during the storm of 1915 are given in the following table:

PRECIPITATION RECORDS AT ERIE, AUGUST 3, 1915.

Interval.	Time.	Precipitation.	Rate in Inches Per Hour.
5 minutes,	6:44 to 6:49 P. M.	0.39 inches,	4.68
10 minutes,	6:43 to 6:53 P. M.	0.66 inches,	3.96
15 minutes,	6:34 to 6:49 P. M.	0.87 inches,	3.48
30 minutes,	6:24 to 6:54 P. M.	1.38 inches,	2.76
1 hour,	5:53 to 6:53 P. M.	1.50 inches,	1.50
2 hours,	4:53 to 6:53 P. M.	2.84 inches,	1.42
3 hours,	3:53 to 6:53 P. M.	4.04 inches,	1.35
4 hours,	3:24 to 7:24 P. M.	4.31 inches,	1.08

The rainfall in successive fifteen-minute periods during the time of heavy precipitation on August 3 was as follows:

Time.	Rainfall.	Accumulated Rainfall.
	Inches.	Inches.
3:30-3:45 P. M.,	0.12	0.12
3:45-4:00 P. M.,	0.19	0.31
4:00-4:15 P. M.,	0.40	0.71
4:15-4:30 P. M.,	0.51	1.22
4:30-4:45 P. M.,	0.16	1.38
4:45-5:00 P. M.,	0.07	1.45
5:00-5:15 P. M.,	0.12	1.57
5:15-5:30 P. M.,	0.64	2.21
5:30-5:45 P. M.,	0.40	2.61
5:45-6:00 P. M.,	0.22	2.83
6:00-6:15 P. M.,	0.03	2.86
6:15-6:30 P. M.,	0.16	3.02
6:30-6:45 P. M.,	0.74	3.76
6:45-7:00 P. M.,	0.51	4.27

Examinations of the slope of the flood crest and measurements in certain restricted sections of the valley made by engineers of the State Water Supply Commission indicate that the run-off approximated the enormous rate of 900 cubic feet per second per square mile of drainage area.

The bridges over the stream at street intersections and the encroachment in the creek channel were largely responsible for the extraordinary flood losses. The culvert at Twenty-sixth Street in the southern part of the city was situated immediately below a small natural basin. Reports of eye-witnesses and evidence on the ground indicate that the culvert soon became choked with debris brought down from the township above and dammed the water back until it rose over the top of the street which at this point is about twenty-five feet above the bed of the creek. After being topped, this culvert was carried out, causing a rush of water and accumulated debris down the valley. This momentary damming back of the crest was repeated at successive bridges and at Twelfth and Tenth Streets, where manufacturing establishments had been constructed over the channel of the creek. If the natural channel of the stream had been unobstructed, it is probable that the flood would have passed off with but comparatively little damage.

EXTENT OF DAMAGE.

According to reports, the creek overflowed its channel in the southern end of the city at about 6:30 P. M., and the flood reached a maximum at Twelfth Street, which is at about the centre of the devastated district, at about 9 A. M. The water began to recede within a few hours, and by daylight of August 4 the stream was again quietly flowing in its channel. The devastated area along Mill Creek within the city averaged about two blocks in width, extending from the southern boundary to the water front, a distance of approximately 2.7 miles. In this area about 600 houses and manufacturing establishments were destroyed or more or less damaged. In addition, street pavements were torn up, water and gas mains and sewers broken and more than twenty highway bridges or culverts and three railroad bridges destroyed or seriously damaged. The total property loss was estimated by the Erie Board of Trade to be in the neighborhood of $2,000,000, exclusive of loss due to interference with business and other collateral losses which could not be accurately estimated. The loss of life was thirty-four, of which twenty-eight bodies were recovered.

RELIEF MEASURES.

When the flood had passed, the city, through its various departments and the many charitable organizations, commenced to provide care for the injured, to find temporary homes for those whose residences had been destroyed, and food and clothing for those in want. Two free restaurants and relief stations were provided, one on State Street near Tenth and the other on Third Street near Parade. In the two weeks these stations were open a total of 21,500 meals was served and shelter or material aid, such as clothing, furnishing employment or financial relief, was furnished to upwards of one thousand.

The State Department of Health Chief Engineer and his assistants directed their attention to the re-establishment of water and sewerage service and also of gas and electricity, the disposal of carcasses, the recovery of bodies and removal of garbage. This work was done by the various city departments and by private interests, the State officers acting in an advisory capacity with the object of taking every precaution to guard against any epidemic of disease and of fostering cooperation in the work of relief and reconstruction.

Natural gas is used almost universally throughout the city for cooking and quite generally for residential and street lighting purposes. The breaking of mains crossing the creek at the various culverts and the severing of service pipes in the many buildings in the devastated area with the consequent escape of gas through the open ends of the pipes forced the gas company to shut off the supply entering the city. On the morning of August 4 the company's repair gangs commenced closing valves, installing temporary pipe lines on the surface of the ground, and plugging broken connections. By this work gas service was resumed in most of the city on the night of August 5 and throughout the entire district on August 6.

The water filtration and pumping plant was out of the flood district and so was not damaged Fortunately, also, the principal force mains leading to the storage reservoir on the heights in the southern portion of the city were not injured. The twelve-inch district supply mains crossing the creek at Twenty-first and Twenty-sixth Streets and the six-inch main at Twenty-third Street were carried away, as well as a section of the six-inch main in German Street between Sixth and Seventh Streets. The city water department, by closing valves and plugging broken pipes, was able to restrict the number deprived of the public water supply to about 600 situated in the extreme southeastern portion of the city in the district east of Mill Creek and south of Twenty-sixth Street, and perhaps twenty in the vicinity of Sixth and German Streets. Repair gangs commenced work on August 4 at the Twenty-sixth Street Creek crossing and on German Street. At Twenty-sixth Street it was necessary to replace about 300 feet of

twelve-inch pipe, and on German Street the broken ends were plugged. Temporary repairs were completed at these points by the night of August 6, which enabled the resumption of water service in the district under low pressure. Repairs were completed on the Twenty-third Street crossing on August 8, and the Twenty-first Street line was restored on August 14, which enabled the city to resume full domestic service and fire protection throughout the affected districts.

The water department on August 4 and 5 distributed water in tank wagons to householders in the districts where the supply from the mains was shut off, and at the State Engineer's suggestion laid temporary pipes with hydrant connections to convenient points in these districts.

Owing to the waste from the large number of broken service connections and to leakage from damaged mains, as well as to the use of fire hose for flushing accumulations from the streets, the water consumption for a few days increased to about twenty-five per cent. above the normal. Fortunately, the capacities of the filter plant and high service pumping station were sufficient to meet this demand without overloading. The possibility of polluted flood water, which entered the bay from Mill Creek, being swept over the water intake in the lake beyond Presque Isle was slight, but as a precautionary measure the State advised the water department officials to increase the amount of chemical germicide and to make bacteriological determinations of samples of the filtered water at more frequent intervals than usually customary. The results of analysis during the first half of August are given in the following table:

Date.	Turbidity.		Bacteria per c. c.		B. Coli.	
	Raw water.	Filtered water.	Raw water.	Filtered water.	Raw water.	Filtered water.
Aug. 2nd,	1	----------	160	4	Present,--	Absent.
Aug. 3rd,	1	----------	390	19	Absent, --	Absent.
Aug. *4th,	1	----------	----------	----------	----------	----------
Aug. *5th,	93	----------	----------	----------	Present,--	Absent.
Aug. 6th,	51	----------	570	----------	Present,--	Absent.
Aug. 7th,	15	----------	Liquified	5	Absent, --	Absent.
Aug. 9th,	8	----------	230	2	Present,--	Absent.
Aug. 10th,	4	----------	310	25	Present,--	Absent.
Aug. 11th,	3	----------	210	3	Absent, --	Absent.
Aug. 12th,	2	----------	160	2	Present,--	Absent.
Aug. 13th,	3	----------	150	12	Absent, --	Absent.
Aug. 14th,	6	----------	150	----------	Present,--	Absent.
Aug. 16th,	1	----------	200	8	Absent, --	Absent.

*Bacteriological work omitted on account of electric current and gas supply being shut off.

It will be noticed that the turbidity and total bacterial content of the raw water were rather high for a few days following the flood, but



Up-stream south from 18th Street Bridge—shows "Nickle Plate" Railroad temporary trestle at 19th Street.



View down-stream from 7th Street between German and Holland Streets Showing culvert.



Jam at south end of 12th Street culvert looking north.



Wreckage on northeast corner of 13th and French Streets.



Up-stream from 23rd Street Bridge, 24th Street and 26th Street Bridges shown.

that in all cases the filters were able to satisfactorily perform their service.

The principal damage to the sewer system consisted of the breaking of twelve lateral connections and the damaging of manholes of the Mill Creek sanitary intercepting sewer, the cave-in of an old forty-eight inch brick storm sewer on Myrtle Street between Fifth and Sixth Streets, and the choking of inlets and clogging of catch basins of storm water and combined sewers throughout the city and especially in the flood zone. Temporary repairs were made to some of the sewer connections, and all catch basins and inlets were cleared of debris and the damaged section of the Myrtle Street sewer was rebuilt. The repairs of some of the connections to the intercepting sewer would have involved the replacing of several hundred feet of pipe and the construction of embankments or trestles to carry the lateral lines across the creek to the intercepting sewer. In these cases the city deemed it advisable to discharge the sewage from such lines directly into the creek and to postpone reconstruction until permanent lines could be installed.

The flood damaged the power plant of the Erie County Electric Company, situated at Twelfth and French Streets, which supplied most of the electric current for domestic and street lighting purposes. This company at once made arrangements for an additional generator and transformer which were shipped to the city and by means of temporary tracks moved to the side of the boiler house. By the time the generator had been placed the company had cleansed the boiler room and made steam pipe connections, enabling them to resume electric service on the night of August 7.

The first problems in clearing away the debris were to reopen the old main lines of travel and to clear the creek of wreckage piled above the few bridges which were not carried away. The employes of the street cleaning, garbage collecting and park departments were immediately available for this work. In addition, under the direction of the various departmental heads, the city employed a large number of extra men, teams and motor trucks to carry on the work. By Friday night, August 6, Third, Fourth and Sixteenth Streets were open for travel. By Saturday night, August 7, Third, Fourth, Fifth, Seventh, Eleventh, Sixteenth, Seventeenth and Eighteenth Streets were open to both vehicle and foot traffic, as well as French Street south of Seventeenth and north of Tenth Streets, and Holland, north from Seventh and south from Eleventh Streets. By August 12 traffic was resumed on all but Eighth, Thirteenth and Fifteenth Streets and from Nineteenth to Twenty-sixth Streets, inclusive. Later the city was able to provide further facilities for travel by means of the construction of temporary foot or wagon bridges at some of these streets.

In clearing away the debris the various manufacturing concerns were requested to donate the use of wagons and motor trucks. In addition, flat cars were rented from the city trolley company and a steam shovel and hand derricks were placed at work in the bed of the creek. The aim of the entire work was first to open up the lines of communication and later to complete the work by clearing away the debris from property adjacent to the streets. The greatest number of laborers at work at one time was approximately 700, on Sunday, August 8. This figure does not include the large force of men employed by the steam railroads, the electric railroad, various manufacturing concerns and private individuals. Such men were engaged upon repair work and removal of wreckage from private property. This figure refers to the men in the city employ who were engaged in clearing the streets, the bed of the creek and the wreckage deposited on private property but outside of the buildings. Mud, dirt, inorganic and non-inflammable materials removed from the district were hauled to the regular dumps maintained by the city for the disposal of refuse. Inflammable material was burned with the exception of large timbers and certain articles of value which were preserved and in many cases were reclaimed by the original owners.

Regular garbage collection service was resumed on August 9, and the street cleaning forces were put back on their regular work on August 10.

In order to prevent the creation of nuisances, it was necessary that all animals recovered from the wreckage be promptly removed and properly destroyed. The flood carried the carcasses of hundreds of pigs and sheep down the valley from two small slaughter houses located along the creek near the southern boundary of the city, and in addition, chickens, several cows and horses from various points in the township and city. Arrangements were made with the Erie Reduction Company to remove these carcasses to the reduction works. It became necessary because of the large number encountered during the first few days of the work to assign additional wagons to this service. Bodies of human beings recovered from the wreckage were removed by the coroner to a temporary morgue for identification and turned over to relatives or buried at public expense.

Of the precautions taken to avoid the possible outbreak of an epidemic in the city, the most important was, of course, the care observed in the purification of the water. Next in importance may be mentioned the condemnation and destruction of damaged foodstuffs in the various grocery stores, meat markets, general provision stores and candy factories situated in the flood district. This latter work was performed by the regular sanitary inspectors of the city health department.

The Commissioner of Health directed the Division of Distribution of Biological Products of the Department to forward a large supply of antitetanic serum and the city supplied antityphoid serum. Preventive treatment was administered by the local health authorities to all who applied. Thirty-six persons received immunizing doses of antitetanic serum and thirty-two were given antityphoid vaccine. In addition, each foreman in charge of workers throughout the flood district was supplied with a first-aid packet, consisting of a bottle of iodine and a roll of gauze, and was instructed in the method of using the disinfectant on cuts or bruises, after which the injured were immediately sent to physicians for treatment. About three hundred of these first-aid packages were used. The city health department, in addition to keeping a nurse and physician on duty at its central office for the treatment of injuries, organized a similar service at the food relief station at Third and Parade Streets. No definite records were kept of the number of cases treated at these points, but the city health department estimates that it was in the neighborhood of two hundred.

Sanitary conveniences were destroyed throughout the flood district, and in addition no such facilities were available for the large number of sightseers who came in from surrounding communities. Accordingly, six sanitary toilets of serviceable design were constructed and placed at three convenient points throughout the district.

In order to destroy bacteria collected on furniture, cooking utensils and on the interior walls and floors of buildings, partly destroyed or flooded, the city established five stations for the distribution of disinfectants. In this work 700 gallons of proprietary coal tar preparations and 24,000 pounds of hypochlorite of lime were used. The coal tar preparations were of service as a deodorant but their use as a disinfectant was not encouraged by the city officials, both because of their doubtful value and because of the great expense as compared with the hypochlorite of lime.

In the welfare work instituted by the charitable organizations it seemed advisable to provide means whereby individuals living in temporary or partially damaged quarters could have access to bathing facilities. A temporary bathhouse containing six shower baths and dressing rooms was erected at the corner of Third and Parade Streets. Towels and soap were also provided. One thousand five hundred and seventy-four baths were taken at this bathhouse in the ten days that is was operated.

Accompanying this report is a series of views of various scenes throughout the flooded district.

The Chief Engineer and Assistant Engineer Moses left Erie on the night of August 11. Assistant Engineer Parke remained until August

17, continuing to assist the city officials in the work of removal of debris and condemnation of damaged foodstuffs.

The value of the protective measures instituted is apparent from the fact that not a single case of typhoid fever or other disease developed from conditions brought about by the flood.

The officials and citizens of Erie have come to realize the necessity of comprehensive changes to prevent possible future floods in the Mill Creek valley resulting as disastrously as the one of 1915. A firm of engineers has been engaged and has prepared and submitted to the city a report contemplating the construction of a proper channel through the city. The plans for this work are now under consideration by the State Water Supply Commission and construction work is expected to begin in the near future.

TASTE AND ODOR OF ALLEGHENY RIVER WATER AT NEW KENSINGTON.

Complaint from Kensington Water Company of New Kensington.

On December 11, 1915, the Kensington Water Company, of New Kensington, requested advice and assistance relative to a peculiar and offensive taste and odor of the Allegheny River water forming their source of supply and regarding which there were general complaints among the consumers supplied by that company. Mr. R. E. Irwin, assistant engineer, was directed to immediately make a field investigation to ascertain the source of the trouble.

It was found in the district supplied by the Kensington Water Company that the taste and odor complained of was called the "drug taste," suggesting the characteristic odor of drug stores. On the 13th the Department representative found that the filtered water had a distinct taste of chlorinated lime, although only a small amount of this disinfectant had been used during the previous several days. The drug taste was also in evidence. Tests with starch-iodine for excessive chlorinated lime gave negative results. The raw water at the pump station gave such a strong taste of iron that the drug taste was not noticeable. Apparently, the same materials which caused the drug taste produced an effect upon the raw water such that ordinary amounts of chlorinated lime disinfectant could not be used with-

out giving the chlorinated lime taste to the filtered water, and it was necessary to reduce the dose to about two pounds per million gallons. Inquiry in the vicinity revealed the fact that similar drug tastes were complained of in the district supplied by the Pennsylvania Water Company, whose intake is in the Allegheny River at Nadine, and at the Suburban Water Company's intake at Oakmont. Inquiry at Tarentum, Kittanning and Emlenton, where Allegheny River water is used, revealed no complaints regarding drug taste, but at Kittanning the taste of chlorinated lime was so strong as possibly to disguise it. (See following map.)

A series of samples were then taken at various points to trace the drug taste up-stream. A sample from the Kiskiminetas River at its mouth indicated a large amount of iron, but the drug taste was not found. Three samples were then taken from the river just below the junction of the Kiskiminetas at points where the current was flowing freely. Near the eastern shore the taste was similar to that of the Kiskiminetas River water, the drug taste being negative. At midstream and also near the western side of the river there was a distinctly positive drug taste. At Kittanning a sample from midstream and one from the intake of the Armstrong Water Company showed positive drug tastes. Samples taken from the Allegheny River just below the mouth of the Clarion River were positive, and above the mouth of the Clarion negative. A sample from Red Bank Creek just above its mouth was negative. A sample from the Clairon River just above Clarion gave a strong drug taste indicating that the source of contamination was on the Clarion River above this point. Samples taken from the Clarion River at Ridgway below the mouth of Elk Creek, from the Clarion above the industrial plants at Ridgway, and from Elk Creek above Ridgway, all gave a strong drug taste. The sample from Elk Creek gave possibly a stronger taste than that from the Clarion above Ridgway, but the fact that the volume of water in the Clarion at this point was much greater than that of Elk Creek would indicate that the actual amount of contaminating wastes discharged into the Clarion was greater than that going into Elk Creek.

At the time of this investigation a general survey of industrial wastes in the entire Clarion River drainage area was being conducted by the Department. All of the plants along the Clarion above Ridgway had recently been inspected and the results of this survey are given later in this report. To avoid unnecessary duplication of work it was therefore decided for the time being to trace the drug taste to its source on Elk Creek only. Following the same procedure along Elk Creek positive tests of taste and the gradually increasing odor of the water led the Department representative to two industrial plants just above St. Marys, the Milville-Corbett Company, which manufactures acetone by dry distillation from acetate of lime, and

the M. J. Corbett and Company, which manufactures wood alcohol, charcoal and acetate of lime. At the plant of the Milville-Corbett Company the water taken from Elk Creek for industrial purposes had a strong drug taste and odor, and it could not be definitely ascertained whether or not the operations of this company increased these characteristics, although the nature of the operations at the plant was such as to indicate that probably at times wastes were discharged which would cause additional contamination of the same or similar character. The only possible source of the trouble above this point was found to be the chemical plant of M. J. Corbett and Company.

The only raw material used at the Milville-Corbett Company plant is acetate of lime procured from the various commercial plants in the vicinity, which is converted into acetone by a secret process of dry distillation. The superintendent stated that there were no waste products from this plant, a new one which began operating April 1, 1915. It seems possible that there may be periodic wastes of objectionable character, but there was no evidence of such at the time of the investigation. The water taken from the stream is used for condensing purposes only, so it was stated. The taste was about the same below as it was above this plant. Between the plant of the Milville-Corbett Company and M. J. Corbett and Company, the stream passes through a mill pond covering about an acre, and the wastes from the upper plant are mixed with a large quantity of water and thereby a continuous flow of contaminating water is produced below this point, although the waste dischages from the M. J. Corbett and Company plant occur only about once every twenty hours.

The M. J. Corbett and Company plant is located near the head waters of Elk Creek. Above this plant there is a pottery and a coal mine, and the stream water as it reaches the chemical works contains mine waste. Lime and wood are the raw products used. By distillation these are converted into charcoal, wood alcohol and acetate of lime. At the time of the investigation the demand for acetate of lime, which is used in the manufacture of powder, caused especial attention to be given to this product and less care was taken to reduce the amount of wood alcohol remaining in the wastes discharged into the stream. In other words, the wastes were stronger than under normal conditions when the distillation process is carried to a higher degree. The superintendent stated that the wastes amounted to about 2,600 gallons discharged practically all at one time about once in every twenty hours. The wastes contain a small percentage of wood alcohol, some tars and oils, and have the taste and odor of carbolic acid and other tar products. There is a considerable amount of tar waste taken from the stills which is sprayed into the fires under the boilers. The superintendent stated that the wastes could all be evaporated, but at considerable cost, and that the value of the residue would

amount to about seventy-five cents for the total amount obtainable from 2,600 gallons of waste. He stated also that the amount of wastes could be reduced.

Undoubtedly, the taste and odor in the Allegheny River complained of by the Kensington Water Company is caused by the discharge of wastes from the chemical plants on the Clarion River. These plants are located mainly in Ridgway, St. Marys, Johnsonburg and Kane, and the wastes are so discharged that undoubtedly the Clarion River water is continually contaminated thereby. The flow from the Clarion River is quickly mixed with the waters of the Allegheny, and the latter is often capable of reducing the taste by dilution and precipitation, so that it is noticeable only occasionally at the water works below. It is also believed that these wastes have some action upon the organic content of the river water such that frequently the organic matter is reduced or modified leaving but a small amount in the water that is active when chlorinated lime is added as a disinfectant in connection with treatment of the public water supplies. Thus a very small amount of chlorinated lime added to the filtered water during such times causes an excess and brings about complaint from the consumers on this account as well as because of the occasional strong drug taste.

The Department has requested the owners of the various chemical plants to consider the early installation of works for the treatment of their wastes. Further investigations will be made during the ensuing year with a view of bringing about the elimination of these contaminating wastes.

INDUSTRIAL WASTE SURVEY OF THE CLARION RIVER BASIN.

The pollution of the Clarion River by industrial wastes has become a serious problem. To the communities along its banks its waters are unsightly and the source of obnoxious odors to a degree amounting to positive nuisance during some seasons of the year. The water in its present condition is unsuitable for domestic consumption, repulsive and injurious to live stock, and even requires filtration before it can be used for certain industrial purposes. The waters of the Clarion River mingling with those of the Allegheny, to which it is tributary, produce a marked and very troublesome effect upon the public water supplies drawn from the Allegheny River at Pittsburgh and other points in that vicinity over eighty miles below the mouth of the Clarion.

These circumstances have prompted a special study of the character and extent of the industrial wastes discharged into the Clarion River

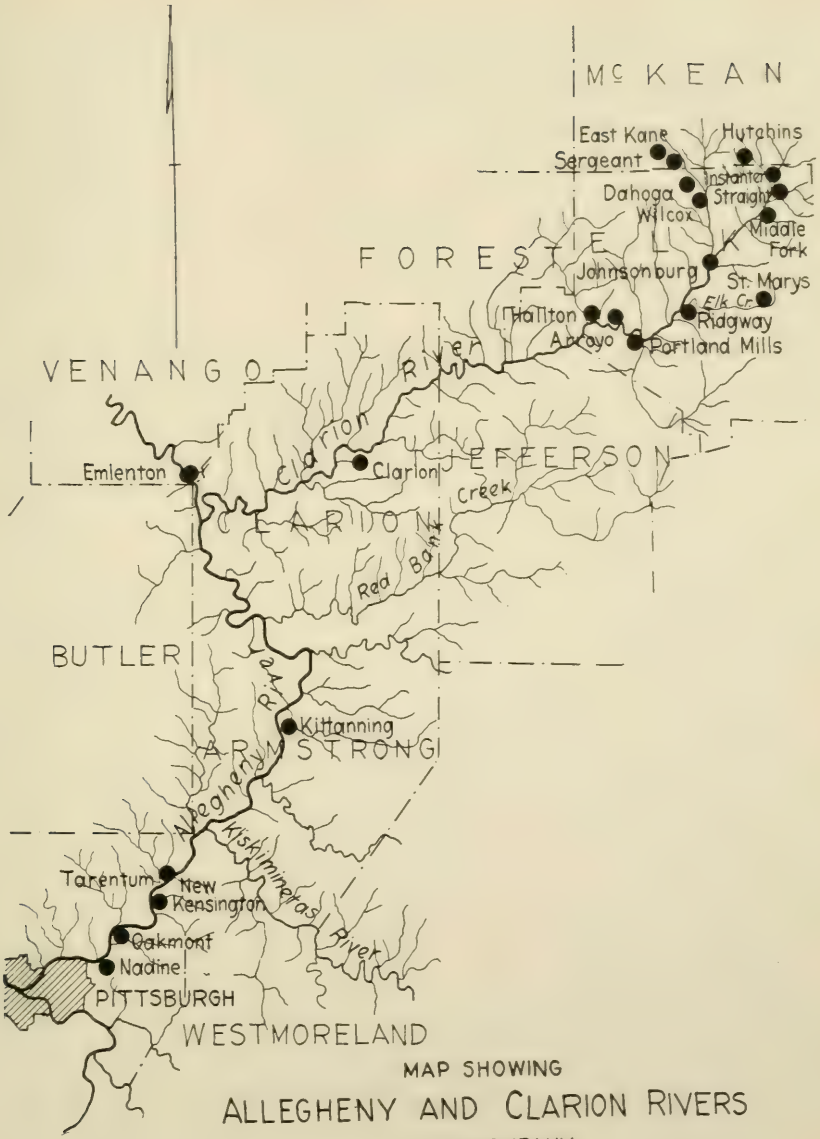
more detailed than one made a few years ago, the results of which were included in the report upon "A Sanitary Survey of the Allegheny Basin," recently published in book form.

Under the direction of the Acting Chief Engineer, Mr. C. A. Emerson, Jr., the special investigation of the industrial waste pollution of the Clarion River was made near the close of the year 1915, by Assistant Engineer Coleman B. Mark, whose report has formed the basis for this report.

The investigation was of a preliminary nature and extended over a brief period of time, as its purpose was to secure the general facts upon which to base such further detailed studies as the circumstances might indicate as necessary or desirable.

The report includes a description of the general conditions found on the watershed covering the stream and its tributaries, the municipalities and their waste supplies, and the uses to which the stream is put, including its use as a means of sewage disposal. The industrial activities in the basin are almost entirely confined to the portion above Clarion borough. A discussion of these is followed by a detailed description of all of the chemical plants, tanneries and paper mills within the drainage area.

The first map indicates the location of these industrial plants in their general relation to the Clarion and Allegheny Rivers and the municipalities deriving water supplies therefrom. The second map shows the upper portion of the Clarion Rver basin and indicates in more detail the location of the plants.



MAP SHOWING

ALLEGHENY AND CLARION RIVERS

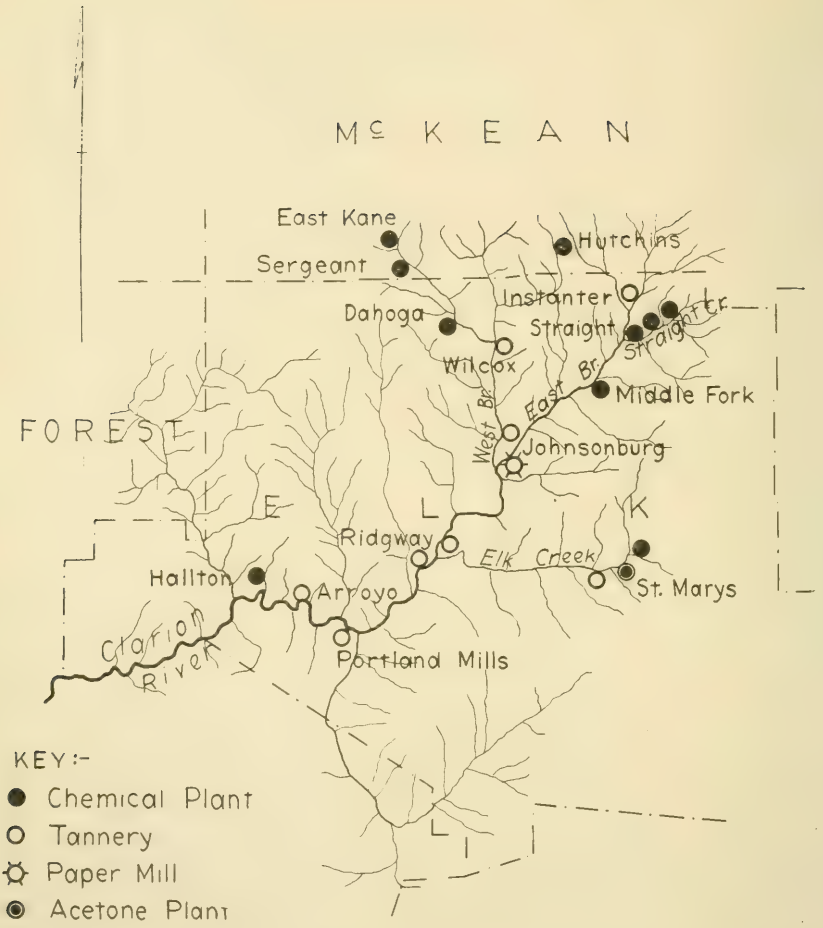
TO ACCOMPANY

REPORTS ON

INDUSTRIAL WASTES INVESTIGATIONS

Scale of Miles

0 6 12 18 24 30



MAP OF
UPPER PORTION OF
CLARION RIVER BASIN
TO ACCOMPANY REPORT ON
INDUSTRIAL WASTES SURVEY
OF THE
CLARION RIVER

Scale of Miles
0 3 6 9 12 15

CONTENTS.

INTRODUCTION.

GENERAL CONDITIONS.

Municipalities and Water Supplies.
Clarion.
Brockwayville.
Ridgway.
St. Marys.
Johnsonburg.
Existing Power Development.
Sewerage.
Proposed Power Development and Flood Control.

INDUSTRIES AND INDUSTRIAL WASTES.

The Chemical Manufacturing Process.
Summary of Chemical Plant Wastes.
The Tanning Process.
Summary of Tannery Wastes.

INDUSTRIAL PLANTS ALONG THE CLARION RIVER BELOW JOHNSONBURG.

Clawson Chemical Company.
Arroyo Tannery.
Portland Tannery.
Ridgway Tannery.
Eagle Valley Tannery.

INDUSTRIAL PLANTS ON ELK CREEK.

St. Marys Tannery.
Millville-Corbett Company.
M. J. Corbett and Company.

INDUSTRIAL PLANTS ON THE EAST BRANCH.

The New York and Pennsylvania Company.
The Soda Process.
The Sulphite Process.
Wright Chemical Company.
T. H. Quinn and Company.
Lackawanna Plant.
Susquehanna Plant.
Straight Creek Plant.
Instanter Tannery.

INDUSTRIAL PLANTS ON THE WEST BRANCH.

Rolfe Tannery.
Wilcox Tannery.
McKean Chemical Company.
Otto Chemical Company.
James Manufacturing Company.
Penn Chemical Company.

CONCLUSIONS.

GENERAL CONDITIONS.

The Clarion River is one of the principal tributaries of the Allegheny and drains about 1,200 square miles in the western part of Pennsylvania. It has two principal sources, the East and West Branches, both of which rise in the southern part of McKean County. The stream flows in a generally southwesterly direction, a total distance of 107 miles, to the Allegheny River, which it joins about 86 miles above Pittsburgh. The drainage area averages about 17 miles in width and includes portions of McKean, Forest, Elk, Jefferson and Clarion Counties. About 40% of the area is farm land. From the remaining woodlands the timber has been entirely removed in past years and about half of this formerly wooded area has been burned over.

The characteristics of the upper and lower portions of the basin differ materially, a distinct transition occurring a few miles above Clarion Borough. In the upper or northeastern part the stream flows through deep valley with steep and rocky sides. This part of the basin was at one time entirely covered by forests, but now the burned and waste area is the most notable feature of this region. The south and southwesterly portion is less abrupt in character with the banks of the river and its tributaries continuously wooded. From the mouth of the river to Hallton, a distance of seventy-two miles, there is no railroad along the stream, and only two small towns of importance. The main tributaries of the Clarion, beside the East and West Branches, are Elk and Little Toby Creeks in Elk County, and Licking, Deer, Piney, Toby and Big Mill Creeks in Clarion County.

In the upper portion of its basin the Clarion River and its branches are paralleled with the lines and branches of several railroads, and for this reason the towns are desirable locations and are rapidly building up with manufacturing plants. The railroads include the Pennsylvania, Buffalo, Rochester and Pittsburgh, Baltimore and Ohio, Erie, Pittsburgh, Shawmut and Northern, and numerous small private railroads. The little remaining timber in this section is being cut for the chemical and paper industries, the lumbering interests being practically at an end. Oil, gas, coal and various manufacturing industries lead in importance.

In the lower portion of the Clarion shed the country is largely devoted to agriculture. Grass lands comprise more than one-half of the area. Timber abounds along the banks of the river and its tributaries. Chestnut, mixed oaks, hemlock, beech and birch are found in the valleys and on the hilltops, but very little of the timber is good for any purpose other than for mining props and railroad

ties. Natural gas, oil wells and coal mines are the main sources of income and employment in this section. There are no towns of any considerable size in this part of the basin with the exception of Clarion, the county seat of Clarion County.

The total population of the Clarion River basin is about sixty-seven thousand one hundred, divided into urban, 25,800, and rural, 41,300. The largest towns in the basin are Clarion, Brockwayville, Ridgway, St. Marys and Johnsonburg. They are briefly described below. All are essentially industrial communities and the principal industries are indicated in a later table.

MUNICIPALITIES AND WATER SUPPLIES.

Clarion Borough is the county seat of Clarion County and has a population of about 3,000. It is near the central part of the county on the Clarion River and is a residential community. The surrounding territory produces coal, natural gas and petroleum. A State normal school is located in the borough. The Clarion Water Company supplies about 2,500 consumers with water derived from drilled wells. The water is treated in a modern mechanical filtration plant and the consumption is estimated at 150,000 gallons daily.

Brockwayville, Jefferson County, is a borough with a population of about 2,200, situated on Little Toby Creek. Coal mining is the dominant interest of the borough and surrounding region. Water is supplied to the public by the Brockway Crystal Water Company, whose sources are Whetstone Run and Rattlesnake Run. These mountain streams are branches of Little Toby Creek, a tributary of the Clarion River. It is a gravity system and supplies about three-fourths of the population of the borough and the village of Crenshaw.

Ridgway is the county seat of Elk County with a population of about 6,500. It is a manufacturing community situated on the Clarion River at the mouth of Elk Creek. The borough owns and operates the water works system supplying the public with water from Big Mill Creek. The water is treated in a modern mechanical filtration plant having a capacity of 1,000,000 gallons daily and is supplied to approximately 5,000 persons besides various manufacturing plants.

St. Marys, Elk County, is a borough with a population of about 6,500, situated on Elk Creek near its head waters. It is a manufacturing town with a number of important industries. Water is supplied to about 6,000 persons and various manufacturing concerns by the St. Marys Water Company, which obtains its supply from Silver Creek, Silver Lake Run and Laurel Run, tributaries of Elk Creek, as well as Wolf Lick Run, which stream is in the Susquehanna

River basin. The company also has wells located on these various watersheds. The daily consumption is estimated at one and a half million gallons.

Johnsonburg, Elk County, is a borough with a population of about 4,500, located on the Clarion River at the forks of the East and West Branches. It is essentially a manufacturing community. Water is supplied to the public by the Johnsonburg Water Company. The supply is drawn from Silver Creek and Powers Run, tributaries of the Clarion River, the Powers Run supply being treated with a disinfectant. The estimated daily consumption is upward of a million gallons.

A number of smaller towns are located in the basin with populations varying from one hundred to one thousand inhabitants. Chemical plants, tanneries, coal mining, natural gas and oil wells are the principal industries of these communities.

The Clarion River is not used as a source of public water supply, although several of its minor tributaries are so used. Outside of the larger communities water for domestic purposes is generally derived from springs and wells. There are no industrial plants above any of the sources of public supply.

Many small dams have been built by the manufacturing firms on the Clarion River and its tributaries for power development and industrial supplies. The largest and only one of much importance is the "Ketner dam," belonging to the Buffalo, Rochester and Pittsburgh Railway Company, located on Johnson Run, a tributary of the Clarion River, joining this stream about four miles above Johnsonburg. The water is used by the railroad company for industrial purposes. The dam is of earth construction with concrete core wall and spillways at each end. It is forty-five feet high, five hundred and ninety-seven feet long, and impounds ninety-two million gallons of water. The drainage area is eleven square miles, consisting of uninhabited waste land. Below the dam the valley of the run is practically uninhabited.

Sewerage.

Along its entire course the waters of the Clarion are used as a means for disposition of sewage from both public and private sewers. It is estimated that upwards of 25,000 persons contribute sewage pollution to the stream and its branches. The sewage of the borough of St. Marys and a portion of Ridgway discharges into Elk Creek, where it combines with extensive industrial wastes, which together produce noticeable odors throughout the year and especially during the summer months.

Ridgway, St. Marys and Johnsonburg in Elk County, Brockwayville in Jefferson County, Strattonville, Clarion, Edenburg, Sligo, Rimersburg and St. Petersburg in Clarion County are contributors of sewage to the Clarion River.

Several of the boroughs have been required by the State to prepare comprehensive sanitary sewerage and sewage treatment plans in contemplation of ultimate treatment of the sewage.

Sewerage permits and decrees have been issued by the Department of Health to Ridgway in 1908 and 1912, to St. Marys in 1907, to Johnsonburg in 1907 (two) and 1912.

Power Development and Flood Control.

On the Clarion River and its tributaries there are about a half dozen existing power developments. These are of little importance and are used to operate small industrial plants. There are, however, good opportunities for the construction of reservoirs for flood control and power development. The Pittsburgh Flood Commission has made a thorough study of this stream in connection with its flood control investigations, and the Clarion River Power Company contemplates the construction of several large reservoirs for power development.

The Pittsburgh Flood Commission has tentatively selected four reservoir sites for flood control, all on the main stream. The proposed sites are, respectively, just above the mouth of the river, twenty-two and a half miles up-stream, four miles above Clarion, below the mouth of Mill Creek, and two miles above Clarington Village. The respective heights would be 142 feet, 89 feet, 128 feet and 70 feet, with storage capacities of five billion cubic feet, two billion cubic feet, five billion cubic feet, and one and a half billion cubic feet. The lengths of the reservoirs would be 24 miles, 13 miles, 23 miles and 14 miles, respectively. The areas flooded by these projects would affect 157 buildings, 2 hotels, 5 stores, 9 saw mills, 1 grist mill, 12 boiler houses, 2 schools and 1 church.

On June 7, 1912, the Clarion River Power Company was incorporated to use the waters of the Clarion River for power development in portions of Elk, Forest, Jefferson and Clarion Counties. This company proposed to construct huge reservoirs and develop power on a large scale, but no construction work has been undertaken and detailed data regarding the reservoirs are not available.

INDUSTRIES AND INDUSTRIAL WASTES.

The following list covers all of the chemical plants, tanneries and paper mills in the Clarion River basin as well as the principal indus-

tries in the several boroughs. The plants and their locations are given in order from the mouth up-stream:

NAME.	LOCATION.
Canoe Creek:	
Ellis Halls & Sons Co..	Knox.
Clarion River:	
Bond, Burney Glass Company,	Clarion.
Clawson Chemical Company,	Hallton.
Elk Tanning Company,	Arroyo.
Elk Tanning Company,	Portland Mills.
Elk Tanning Company ("Ridgway"),	Ridgway.
Elk Tanning Company ("Eagle Valley"),	Ridgway.
Ridgway Dynamo and Engine Company,	Ridgway.
Ridgway Brick Company,	Ridgway.
Eagle Valley Machine Shops,	Ridgway.
Hyde-Murphy Lumber Company,	Ridgway.
Yingling-Martin Brick Company,	Johnsonburg.
Johnsonburg Machine Co..	Johnsonburg.
Johnsonburg Carbon Works,	Johnsonburg.
Little Toby Creek:	
Brockway Machine Bottle Company,	Brockwayville.
Elk Creek:	
Russell Car and Snow-Plow Company,	Ridgway.
Elk Fire Brick Company.	Daguscahonda.
Fox Silica Sand and Stone Company,	Daguscahonda.
Auto Machine Company,	St. Marys.
Builders Supply Company,	St. Marys.
Elk Engineering Company,	St. Marys.
Elk Fire Brick Company.	St. Marys.
Elk Graphite Milling Company,	St. Marys.
Pennsylvania Fire-Proofing Company,	St. Marys.
White Silica Sand Company,	St. Marys.
Elk Brewing Company,	St. Marys.
Pittsburgh, Shawmut and Northern Railroad,	St. Marys.
Stackpole Carbon Company,	St. Marys.
Spear Carbon Company,	St. Marys.
Kistler-Lesh and Company,	St. Marys.
Millville-Corbett Company,	St. Marys.
Kaul and Hall Lumber Company,	St. Marys.
M. J. Corbett and Company,	St. Marys.
St. Marys Sewer Pipe Company,	St. Marys.
East Branch:	
New York and Pennsylvania Company,	Johnsonburg.
Highland Paper Company.	Johnsonburg.
Wright Chemical Company,	Middle Fork.
Susquehanna Chemical Company,	Straight.
Lackawanna Chemical Company,	Straight.
Straight Creek Chemical Company,	Straight.
Elk Tanning Company,	Instanter.
West Branch:	
Kistler-Lesh and Company,	Johnsonburg.
Rolfe Saw Mill Company,	Rolfe.
Elk Tanning Company,	Wilcox.
Wilcox Glass Company,	Wilcox.
Wilcox Glass Bottle Company,	Wilcox.
McKean Chemical Company,	Dahoga.
Otto Chemical Company,	Sergeant.
Pennsylvania Glass Manufacturing Company,	Sergeant.
James Manufacturing Company,	East Kane.
Penn Chemical Company,	Hutchins.

The tanneries, chemical plants and paper mills are the principal sources of trade waste pollution, and the investigation has been primarily directed to these plants. Most of the others listed above are of such a nature as not to be important in this respect.

All of the tanneries, chemical plants and paper mills were visited and studied and a description of each is given in this report. Since the methods employed in the plants of each kind are essentially the same, it seems advisable to give at the outset a general description of the processes at the tanneries and at the chemical plants, to the end that the latter descriptions may be more clearly understood. As there is but one paper mill involved, the process is included in the detailed report on that plant.

The succeeding sections are arranged to cover the river and its several tributaries as units including the plants of all kinds. Each group is preceded by a brief description of the portion of the basin involved.

The following is a list of the plants described in order on the succeeding pages:

NAME.	LOCATION.
Clawson Chemical Company,	Hallton.
Elk Tanning Company,	Arroyo.
Elk Tanning Company,	Portland Mills.
Elk Tanning Company (2 plants),	Ridgway.
Kistler-Lesh and Company,	St. Marys.
Millville-Corbett Company,	St. Marys.
M. J. Corbett and Company,	St. Marys.
New York and Pennsylvania Company,	Johnsonburg.
Highland Paper Company,	Johnsonburg.
Wright Chemical Company,	Middle Fork.
Susquehanna Chemical Company,	Straight.
Lackawanna Chemical Company,	Straight.
Straight Creek Chemical Company,	Straight.
Elk Tanning Company,	Instanter.
Kistler-Lesh and Company,	Johnsonburg.
Elk Tanning Company,	Wilcox.
McKean Chemical Company,	Dahoga.
Otto Chemical Company,	Sergeant.
James Manufacturing Company,	East Kane.
Penn Chemical Company,	Hutchins.

The Chemical Manufacturing Process.

The term "chemical plant" as used in this report refers to those which manufacture wood alcohol, charcoal and acetate of lime by the destructive distillation of wood. The only raw materials used in the chemical works as found on the Clarion River watershed are wood and lime. The wood is that of deciduous trees, birch, beech and maple preferred. As practically all the available timber has been removed from the land in this section of the State, all the plants are

obtaining wood from other sources. One cord of wood will produce from forty-two to forty-eight pounds of charcoal, eleven to fourteen gallons of alcohol and about two hundred pounds of acetate of lime. The plants in the Clarion River basin vary in size, using from fifteen to seventy cords of wood daily.

Trees are cut into lengths varying from three to four feet and are air-dried in piles either in the woods or factory yard. Without further treatment these are placed in iron-racked cars, running on a narrow gauge track and pushed into iron or stone retorts, where after a period of eighteen to twenty hours the wood is reduced to charcoal, tar and volatile matter. The car containing the charcoal is removed from the retorts into sealed cooling drums or holders, and after cooling a number of hours is removed to a second cooling drum which is not sealed, and then allowed to stand in the open air for at least twelve hours, after which the charcoal is ready for shipment. As the charcoal retains a considerable amount of carbon it cannot be chipped until danger of combustion is removed, and the cooling process is, therefore, supervised by the Interstate Commerce Commission.

At each retort there is a water-cooled condenser in which the moisture and volatile matter is condensed as pyroligneous acid, which first goes to the "tar separator" in which most of the tar is removed by settling. The settled liquor containing alcohol and acetic acid, with acetone and other organic substances, is then run into mixing tubs where it is mixed with milk of lime which fixes the acetic acid. The wood alcohol is next separated from this by distillation in stills called "coppers" where heat is applied until all the alcohol has been driven off and passed to a combined condenser and still.

The remaining liquor in the "copper" is a solution of acetate of lime, the sludge containing salts, including hydroxide of magnesium and insoluble impurities. The acetate of lime is run into evaporating pans. The sludge is placed on a screen in the "filter box," and allowed to drain, and then leached with warm water until practically all the soluble matter has passed through the screen. The liquor drained and leached out in this manner is added to the acetate of lime in the evaporating pans and the whole evaporated to dryness, when it is ready for shipment. Acetate of lime yields acetic acid, used in making white lead and in the textile and leather trades, and also acetone, used in making explosives and chloroform.

The sludge from the "coppers" after draining and leaching is a waste product and is used to fill in around the plant. It consists mainly of spent lime with enough tar to give a light brown color.

The distillate from the stills or "coppers" consists of methyl alcohol or wood naptha with some remaining acetone and other impurities. This passes to the alcohol still and condenser and is there heated to various temperatures, depending on the grade of alcohol desired.

The "spent alcohol liquor" remaining in these stills after the distillation process has been carried to the desired point is a waste product, and is in most cases passed through settling basins before reaching the nearest stream. These stills are emptied at about twenty-four hour intervals. The waste contains varying percentages of alcohol, depending on the degree to which the distillation had been carried. It also contains various dissolved oils including creosote, rosin and tar. It has a distinct brown color and a pronounced odor of creosote. The tar from the retorts and the "tar separator" is placed in tar stills and the moisture removed by heating. The tar is then used as fuel for the steam boilers. The distillate, after condensation, is settled in tanks, where it separates into two layers, the upper known as "chemical oil," the lower being weak acetic acid. This acid goes to the mixing tubs along with the liquor from the "tar separator" described above. Formerly the chemical oil was generally used at the plants as fuel beneath the boilers. At the present time most of the plants are selling this oil to explosive manufacturers.

Much water is used in the chemical plants. It is usually pumped from the nearest stream, though sometimes a gravity supply is obtained. The water is used for condensing purposes, boiler feed and general washing and cleaning up. At most of the plants an excess of water is pumped and allowed to waste through relief valves or overflows, whence it flows to the nearest stream, carrying only such wastes as may be added to it due to washing up the floors and cleaning around the plant in general. This does not include the water used in washing out the various parts of the apparatus.

There is practically a continuous flow of waste wash water from the plant carrying dilute wastes, due to the fact that the evaporating pans, stills, screens and mixing tubs are washed out at about daily intervals. The tar storage tank is also occasionally washed out. This wash water is usually discharged into an earth excavated percolating or settling basin before reaching the stream, this basin being distinct from those used for the other wastes.

The condensing or cooling water from the alcohol stills is usually clear and unpolluted and is usually discharged directly to the stream.

We may therefore summarize the waste products and their disposal briefly as follows:

Lime sludge,	Wasted to dump.
Spent alcohol liquor,	Wasted to basin or direct to stream.
Tar,	Burned (or sold).
Chemical oil,	Burned (or sold).
Excess water,	Direct to stream.
Wash water,	Wasted to basin or direct to stream.
Condensing water,	Wasted to basin or direct to stream.

All of the plants have the wastes listed above, but the means of disposal and the extent to which the wastes are treated before reaching the streams as well as the method of treatment vary considera-

bly at the different plants. The methods of disposal at each plant are described in detail later in this report. The location of all the plants is shown on the map accompanying this report.

The amount of spent alcohol waste from each plant is capable of approximate estimation and is the one which causes by far the most trouble in the streams below the works. The other wastes vary from time to time, and owing to absence of means to determine the extent of each, no estimates have been made. The condensing water represents the greatest amount of liquid discharged from the plants but it carries no trade wastes. "Excess water" and "wash water" come next in volume, the former carrying but little and the latter a considerable amount of trade waste of an objectionable nature. The following table shows the estimated amounts of spent alcohol liquor wasted at each plant daily:

Summary of Chemical Plant Wastes—Clarion River. (The spent alcohol liquor is the part of the waste which most seriously affects the streams and is the only item for which even approximate figures are available.)

	Spent Alcohol Liquor Gallons Daily.
Along Clarion River:	
Clawson Chemical Company,	1,800
Elk Creek:	
M. J. Corbett and Company,	2,000
East Branch:	
Wright Chemical Company,	600
Lackawanna Chemical Company,	1,200
Susquehanna Chemical Company,	600
Straight Creek Chemical Company,	2,500
Total,	4,900
West Branch:	
McKean Chemical Company,	2,500
Otto Chemical Company,	600
James Manufacturing Company,	600
Penn Chemical Company,	800
Total,	4,500
Grand total,	13,200

The Tanning Process.

The eight tanneries in the Clarion River basin all manufacture sole leather only. Originally a large proportion of the tan bark was obtained from the surrounding forests, but of late years the practical exhaustion of the local supply has made it necessary to obtain the tanning materials mainly from outside the basin. The raw hides come from many sources, mainly from the Western States, India and South America.

The several stages in the process at all these tanneries are essentially the same, the methods varying only in their details. Briefly, the raw hides are first given a preparatory treatment to cleanse and soften them. This varies in kind, depending on the condition and character of the hides as received. The hair and then the flesh are next removed and the hides subjected to a swelling process which opens the pores and allows the tannin to penetrate the fibre. The introduction of the tannin into the hides generally requires five to seven weeks' time. The hides are then bleached, "stuffed," dried and finished by a process called "blooming." These various steps are described in detail below.

The hides when received at the tannery are either "green" as they are removed from the animal, or preserved with salt. They also frequently contain lime or other disinfectants and arrive in all stages of putrefaction. Some are dry and hard. The first treatment is given in the "soaks," vats in which they are soaked in water to cleanse and soften them, removing the salt, blood, manure, etc. Dilute acids are frequently added to the water to swell and soften the hides and arrest putrefaction. Caustic soda, sodium sulphate, or sulphuric acid are commonly used. The period of retention in the "soaks" varies from a few hours to a few days. Some hides require additional treatment by agitating them in "wash and hide wheels" to bring them into proper condition.

The wastes from this part of the process include waste water from the "soaks" containing blood, manure, salt, a small amount of hair. and in some plants "hide mill" wastes, containing about the same impurities, and wastes from the "wash and hide wheels" carrying hair, lime and "fleshings."

After thus cleansing and softening the hide the hair is removed by "sweating" or by using lime. The old method of loosening the hair by putrefaction or, as it is called, "sweating," is becoming obsolete and is used at only one of the eight plants in the Clarion basin. In this process the hides are hung in closed chambers or "sweat pits," each holding from fifty to a hundred hides, where they are kept at the proper temperature by the admission of steam when necessary. Very little ventilation is allowed, and a large quantity of ammonia given off by decomposition assists in loosening the hair. The hides are then put into vats and treated with sodium sulphate to swell them, and then cleaned in the "hide mill" prior to scraping.

Lime is the agent now almost universally employed for dehairing. The action of the lime is a solvent one in which the hard cells of the epidermis swell up and soften and the hair sheathes are loosened and dissolved. The hides are completely immersed in milk of lime in large pits, in which they are moved about from time to time, the solution being kept agitated. The amount of lime used and the time

the hides are allowed to remain in the pits varies widely, depending on the condition and thickness of the hides. Four or five days are generally found sufficient for dehairing.

The wastes from the lime pits or "limes" contain lime, hair and some manure and dirt. The sludge is used by farmers as fertilizer. Buffalo hides have little hair and are treated with lime in "hide mills" instead of in "lime pits." Some plants treat only these hides and therefore have no wastes from the "limes." They are however dipped into water in "rinse pools" before "fleshing."

After the hides have been removed from the "lime pits" they are put into revolving "wash and hide wheels" partly filled with water or rinsed in "hot water pools" or "green stock pools" and allowed to drain. The wastes from the "rinse pools" contain some hair and dirt but are quite clear. The "hot water pool" and "green stock pool" wastes contain considerable lime with a little hair. The "wash and hide wheel" wastes contain much lime and hair and small particles of flesh.

The hides then go to the "unhairing and fleshing machine" where the hair is removed by hand scraping with a blunt two handled knife. Machinery is sometimes used for removing a part of the hair. Then after washing in water the hides undergo the operation of "fleshing" for the removal of loose fatty tissue and adhering portions of flesh from the inner or "flesh side." A two-handled knife is used having a double edge, one for scraping, the other for cutting. They are then cut down the center and tanned as "sides." The hair is washed, dried and sold. The "fleshings" are sold to glue makers. The wastes from the "unhairing and fleshing machine" contain lime, hair and small particles of flesh. The "hair washer" wastes contain lime and some hair.

When necessary to more completely remove the lime the hides are then placed in a weak acid bath. Lactic acid is the most common and the hides are kept in motion until the lime is nearly but not quite neutralized. Sodium bisulphate or some strong mineral acid such as sulphuric acid may also be used.

The hides thus prepared are suspended in pits containing old and nearly exhausted tannin liquor. The treatment here varies. Sometimes the hides are kept agitated by machinery, in which case they are known as "rockers." In some cases lactic and acetic acids are added to neutralize any remaining lime and to swell the hide so that the tannin may penetrate. The waste liquor is called "tail rocker liquor" or "sapped liquor." It is a weak thin tan liquor, darkly colored, but with a very small percentage of tannin.

The hides then go to the "handlers," which are pits arranged in series of varying numbers. Weak tannin liquor enters the first pit of each series, passes into the second, and so on down the series, being

followed by gradually stronger liquor until the desired strength is reached. A small part of the spent liquor from the "handlers" is used in the "rocker pits" and the rest is either sent to the extract works to be concentrated or is wasted. This waste is in all respects similar in character to the "tail rocker liquor" and "sapped liquor" wastes described above.

The hides then go to the "layers," pits in which the hides are "dusted" with ground bark or "extract" and submerged with tannin liquor for a period ranging from four to six weeks.

As the tannin penetrates further into the hide the strength of the liquor is continually increased. Oak wood, chestnut wood and hemlock bark extracts are used in large quantities to strengthen the liquor. The leather is left a sufficient time in the "layers" to obtain its maximum weight and solidity.

The coming into general use of tanning extracts has made it necessary for the tanneries in the Clarion River basin to bleach their product to obtain the desired color. The apparatus employed consists of five vats in a row, over which is built a hoist so arranged that the leather hung in frames can be dipped consecutively into each of the vats. Vat No. 1 contains water; vat No. 2, alkali (usually soda); vat No. 3, water; vat No. 4, sulphuric acid; vat No. 5, hot water. The amount of alkali required for bleaching varies according to the condition of the leather and the color desired. The function of alkali in bleaching is to liberate from combination some of the tannin, the amount governed by the strength of the solution and the length of time the leather is immersed. The tannin thus released is cleared out by the action of the sulphuric acid. The wastes from the five bleaching vats are all discharged together and contain tannin liquor, soda and acid, the latter two virtually neutralizing each other.

The buyer of leather makes his selections according to color and the manufacterer sells his product by weight. There is an opportunity afforded while securing and making permanent the desired color in the leather to increase its weight, and, therefore, its selling value. These ends are accomplished by the so-called process of "stuffing," in which there are two stages. The leather is placed in a revolving drum in a weak tannin liquor and allowed to take up as much tannin as possible, securing uniform color and added weight. The color is then fixed by placing in revolving drums with a compound of oil and grease. There is some waste from these drums containing tannin, oil and grease in small amounts.

The leather is then removed to the drying lofts where it is hung until thoroughly dried. This usually requires a period of ten days or two weeks, during which time any tendency to shrinking is prevented by sponging and rolling the particular hides affected.

After drying the hides are again oiled and given a gloss on one side by rolling in the "blooming machine." The leather is then made up in bundles, weighed, and is ready for the market. There is a small amount of oily waste containing some tannin from the sponging and oiling processes.

In preparing the tannin liquors the bark is ground in "disintegrators" or "crushers" to a suitable state of fineness, and then "leached." At the tanneries described in this report, round tub leaches are employed, six to eight in a battery. The leaches have perforated false bottoms supporting the ground bark, and water or spent liquor is passed downward consecutively through each of the tubs in the battery. The leaches are arranged to give a gravity flow through the battery and thence to the various points desired. Increased strength is given the liquors by the addition of a concentrated extract after it leaves the "leaches." The spent bark is emptied through the bottom of the tub, and used as fuel underneath the boilers.

Chestnut extract is the one in common use in the Elk Tanning Company's plants operating in the Clarion River basin, and this company maintains a plant at Ridgway for its manufacture. To this plant most of the spent liquor from the other tanneries is sent and concentrated into liquid extract by evaporation.

Briefly then, tannery wastes include lime, blood, manure, fleshings, decomposed organic matter, hair, tannin, acids, dye, grease, oil, and the micro organisms which some of the liquid wastes contain in great numbers. In addition to these there are the miscellaneous wastes coming from cleaning up the floors and plants generally. In former times the wastes were always discharged directly into the nearest stream. At most of the tanneries described herein various methods of purifying the wastes are employed, but usually with small degrees of success. The methods employed are described later under the detailed description of each tannery. The location of all the tanneries is shown on the map accompanying this report. The various tanneries keep records of the amount of wastes of the several kinds with a view of obtaining economical operation, and these figures being available, they are given in the following table:

SUMMARY OF TANNERY WASTES—CLARION RIVER.

Wastes.	Along Clarion River.				Elk Creek.	West Branch.		E. Branch.	Total.
	Arroyo tannery.	Portland tannery.	Ridgway tannery.	Eagle Val. tannery.	St. Marys tannery.	Rolfe tannery.	Wilcox tannery.	Instanter tannery.	
	Cu. ft.	Cu. ft.	Cu. ft.	Cu. ft.	Cu. ft.	Cu. ft.	Cu. ft.	Cu. ft.	Cu. ft.
Hides treated,	225	175	250	1,000	350	289	700	325	
Soaks,	1,560	640	250	3,656			3,030	1,600	10,736
Limes,		*880		1,288			5,640	†300	8,108
Hide mills,	11,200	3,350	4,000				9,600		28,150
Hot water pools,		880		2,912			2,580	1,800	8,172
Green stock pools,		470	100	7,232				2,860	10,662
Rinse pools,		880					1,175		2,055
Handlers,	3,000	200	200						3,400
Wash and hide wheel,		560		3,100			5,340	2,000	11,000
Unhairing and fleshing machine,		500	100	1,290			1,000		2,890
Hair washer,		250		4,800			2,600	1,620	9,170
Bleach,	6,100	360	300	447			550	450	8,207
Tail rocker liquor,				5,000			5,550	1,500	12,050
Sapped liquor,		450	440						890
Miscellaneous wastes,	280	500	220	340			200	500	2,040
Total cu. ft.,	22,140	9,920	5,610	30,065	16,712	12,071	37,165	12,630	117,530
Total gallons,	165,607	74,201	41,962	224 886	125,000	95,000	277,994	94,472	1,099,122

*This amount discharged once per week.
†This amount discharged four times per week.

INDUSTRIAL PLANTS ALONG THE CLARION RIVER BELOW JOHNSONBURG.

The physical characteristics of this stream have been described earlier in this report. Four tanneries and one chemical plant are located along its course below Johnsonburg. The plant farthest downstream is that of the Clawson Chemical Company at Hallton, seventy miles above the mouth of the river. The next is the Arroyo tannery of the Elk Tanning Company, five miles above Hallton. At Portland Mills, five miles further up-stream, is the Portland Tannery of the Elk Tanning Company, and at Ridgway, twenty-one miles above Hallton, there are two plants of the Elk Tanning Company, the "Ridgway" and the "Eagle Valley" tanneries. These plants are briefly described below:

Clawson Chemical Company.

This plant is located at Hallton, in Spring Creek Township, Elk County, near the mouth of Spring Creek, a tributary of the Clarion River. The plant burns fifty-five cords of wood daily, producing approximately six hundred and twenty-five gallons of wood alcohol, twenty-four hundred bushels of charcoal, and eleven thousand pounds of acetate of lime.

All the trade wastes from the plant, including 1,800 gallons daily of spent alcohol liquor, receive partial treatment. The wash water and excess water pass in series through three settling basins and thence to the stream. The greater part of the solids is deposited in the first of these basins. The settling basins are about five feet in depth, the first being 36 x 30 feet, the second about 100 x 30 feet, and the third 80 x 35 feet. The basins are formed in earth excavation and embankment, the liquids entering by a single trough at the top of the embankment and passing out at the other end through a similar trough. There are no baffles to secure uniform distribution. The effluent is fairly clear.

The spent alcohol liquor and the condensing water wastes pass through a settling basin and so-called "filter bed." The basin is about five feet deep and eighty feet by thirty-six feet in horizontal dimensions, constructed in earth excavation and embankment and without baffles. From this basin the liquid passes over the embankment into the filter bed. This is seventy feet by twenty-four feet and about four feet deep, constructed in earth excavation and filled to a depth of three feet with coke breeze over which is placed a layer of broken stone. There are no troughs or other means for distributing the liquid over the bed and there is no underdrainage sys-

tem. The liquids work their way through the coke breeze and eventually pass out to the stream through a vitrified pipe eighteen inches in diameter extending through the bottom of the embankment.

Arroyo Tannery.

The Arroyo tannery of the Elk Tanning Company is located at the village of Arroyo in Spring Creek Township, Elk County, on the Clarion River. The plant employs one hundred and fifty men, handling two hundred and twenty-five hides or four hundred and fifty sides daily. It differs from any other of the tanneries in this section in that the unhairing is done by the "sweating" process previously described.

About forty pounds of lime, eighty-three pounds of sulphuric acid, eighty-three pounds of sodium sulphate and twelve hundred pounds of salt are used daily.

The amount of wastes discharged daily into the Clarion River are as follows:

11,700 gallons,	Soaks.
83,800 gallons,	Hide mills.
22,400 gallons,	Handlers.
45,600 gallons,	Bleach.
2,100 gallons,	Miscellaneous.

Approximately one hundred and sitxy-six thousand gallons of waste are discharged into the stream.

The wastes from the plant are collected in a circular concrete sump sixteen feet in diameter and eight feet deep, from which they are pumped to the sedimentation basins, of which there are two. These basins are used ordinarily in series, but are operated separately when cleaning. They are located on the bank of the river and lie parallel with the flow of the stream. The large basin is about 175 feet long and averages 40 feet wide. It is divided into five compartments by weir boards spaced 35 feet apart. The depth of these compartments is about 3½ to 4 feet. The waste entering the upper end of the basin passes consecutively over the weirs, through each compartment and is then discharged through a trough over the embankment to the other basin or directly into the stream.

The smaller basin is about 100 feet long, and averages 40 feet in width, and is 3½ to 4 feet deep, with four compartments, the three weirs being spaced 25 feet apart. This is operated in the same manner as the one described above. Owing to limited space available, the sludge removed from the various compartments is thrown onto the bank of the stream, where every rain washes it directly into the waters of the Clarion River.

Very little attention is given to operation, and at the time of this investigation the basins were found filled with sludge and a large

portion of the waste from the plant was overflowing directely from the collecting sump to the stream.

Portland Tannery.

The Portland tannery of the Elk Tanning Company is located on the Clarion River at Portland Mills, a village in Spring Creek Township, Elk County. This plant employs fifty-five men, handling one hundred and seventy-five hides or three hundred and fifty sides daily. The lime non-acid unhairing process is used. Seven hundred and fifty pounds of lime, twenty pounds of caustic soda and one hundred and seventy-five pounds of sulphuric acid are used daily.

The amounts of wastes discharged from the plant daily are as follows:

4,800 gallons,	Soaks.
25,000 gallons,	Hide mills.
6,600 gallons,	Hot water pools.
3,500 gallons,	Green stock pools.
6,600 gallons,	Rinse pools.
1,500 gallons,	Handlers.
4,200 gallons,	Wash and hide wheel.
3,700 gallons,	Unhairing and fleshing machine.
1,850 gallons,	Hair washer.
2,700 gallons,	Bleach.
3,400 gallons,	Sapped liquor.
3,700 gallons,	Miscellaneous wastes.
(6,600 gallons once a week),	Limes.

An average of approximately sixty-eight thousand gallons of liquid wastes is discharged daily from this plant into the Clarion River. Spent liquor is not always shipped to the extract works, but at times is discharged with other wastes into the sedimentation basins.

The sedimentation basins are six in number, of earth construction, each about 180 feet long, 20 feet wide and 4 feet deep, with sloping sides. They are built in sets of three each, operated alternately, a sufficient space being allowed between the two sets to remove the sludge by shoveling it into wheelbarrows.

The waste flows by gravity from the plant, entering a screen chamber constructed at the end of the first or upper basin of each set. This is provided with a coarse bar screen which retains some lime, hair and fleshings. The screen is cleaned daily, and the small amount of material removed to the dump.

The waste flows consecutively through the three basins and thence through a trough at the end into a drain extending to the Clarion River. After the three basins have filled with sludge, the other set of three is placed in operation. The sludge is allowed to remain until practically dry and then removed to piles in the yard or given to farmers for fertilizer.

At the time of investigation the basins were operating normally, and while no color is removed practically all the solids are recovered.

Ridgway Tannery.

The Ridgway tannery of the Elk Tanning Company is located at Ridgway, Elk County, on the banks of the Clarion River. This is a typical tannery and employs sixty-five men, handling two hundred and fifty hides or five hundred sides daily. The lime non-acid unhairing process is used. One hundred and forty pounds of caustic soda, one hundred and forty pounds of sulphuric acid, eight hundred pounds of lime and thirty-two pounds of sodium sulphate are used daily.

The wastes from this plant are about forty-two thousand gallons daily, as follows:

1,875 gallons,	Soaks.
30,000 gallons,	Hide mills.
750 gallons,	Green stock pool.
1,500 gallons,	Handlers.
750 gallons,	Unhairing and fleshing machine.
2,250 gallons,	Bleach.
3,300 gallons,	Sapped liquor.
1,650 gallons,	Miscellaneous wastes.

The spent tannin liquor is sent to the Clarion Extract Works of the Elk Tanning Company, located at Ridgway, where it is reduced to extract by evaporation. There are no polluting wastes from the extract evaporating process.

The water, soda and sulphuric acid from the bleaching vats are emptied three to four times a week and discharged directly into the stream. The balance of the liquid wastes are collected in a rectangular concrete sump 18 feet long, 10 feet wide and 12 feet deep, and thence pumped to the treatment plant where the suspended solids are retained.

The wastes are treated by sedimentation in baffled wooden tanks and screened by upward flow through gravel. The tanks and gravel beds are arranged in two units, one of which is used while the other is being cleaned. The entire structure is substantially built of wood, 80 feet long and 13 feet 4 inches wide, divided longitudinally into the two units each of which is 6 feet 8 inches wide. The gravel screens or "filters" are placed at the effluent end of each unit within the structure. The sedimentation compartment is about 63 feet long with 5 horizontal baffles, and the gravel screen is about 17 feet long. The screen or "filter" consists of twenty-four inches of gravel, graded from two inches down to one-eighth inch in diameter. The coarser gravel is at the bottom supported by wooden slats beneath which there is a space about two feet in depth communicating directly with the settling chamber. The liquids pass upward through the gravel and thence over a weir into a trough. This trough is common to both units and leads the effluent directly to the stream.

The tanks are eight feet deep at the influent and six feet deep at the effluent end, the bottom sloping to facilitate the removal of the sludge. Gates are provided through the baffles and the sludge is drawn out at an opening in the bottom at the influent end. It is here discharged onto the ground and when sufficiently dry is removed to dump piles or carted away by farmers. No special sludge bed is provided. Means are provided for drawing off the supernatant liquids before cleaning and these are returned to the sump previously described. This treatment does not remove the color, but a very large proportion of the solids are retained in the tank.

Eagle Valley Tannery.

The Eagle Valley tannery of the Elk Tanning Company is located at Ridgway, Elk County, along the banks of the Clarion River. This plant employs two hundred and fifty men, handling one thousand hides or two thousand sides daily. About three hundred and twenty-five pounds of sulphuric acid and two thousand five hundred pounds of lime are used daily. The lime non-acid process is used in unhairing the hides.

The wastes from this plant are approximately as follows:

27,350 gallons,	Soaks.
9,600 gallons,	Lime.
21,800 gallons,	Hot water pools.
54,000 gallons,	Green stock pools.
23,100 gallons,	Wash and hide wheel.
9,650 gallons,	Unhairing and fleshing machine.
35,900 gallons,	Hair washer.
3,300 gallons,	Bleach.
2,500 gallons,	Dipping tubs, etc.
37,400 gallons,	Tail rocker liquor.

The total amount of liquid waste discharged into the Clarion River daily from this plant is approximately two hundred and twenty-six thousand gallons.

The liquid wastes are collected in a circular concrete sump twenty-four feet in diameter and twelve feet deep. From this sump they are pumped to the sedimentation basins. The sump also has a valved drain pipe discharging the waste to the stream when desired. The basins are five in number, of earth construction, 200 feet long, 18 feet wide and 4½ feet deep, with sloping sides. In each basin are placed four wooden weir baffles at equal distances apart, extending from the bottom to about one foot below the level of the top of the embankment. The waste enters through a four inch wrought iron pipe rising vertically near the center of the first compartment of each basin, and each basin has a separate outlet to a ditch leading about 100 feet to the river.

At the time of the inspection three of the basins were empty and the baffles in a dilapidated condition, indicating disuse. One basin

was full of sludge which evidently had been there for some time. The one basin in actual service was nearly filled with sludge and did little work. A great portion of the wastes was being by-passed from the sump directly to the stream without treatment and only a part passed through the basin.

INDUSTRIAL PLANTS ON ELK CREEK.

Elk Creek, a tributary of the Clarion River, joining its waters at Ridgway, rises in the hills near St. Marys, flowing in a westerly direction through a deep, narrow gorge. The territory on both sides is burnt over waste land. About ten miles above the mouth of the stream, at St. Marys, are located the three plants with which this report is concerned, namely, the St. Marys tannery of Kistler-Lech and Company, the acetone plant of the Millville-Corbet Company, and the chemical works of M. J. Corbett and Company.

A large amount of industrial waste as well as considerable sewage and some mine drainage enter Elk Creek. An inky black color and offensive odors are noticeable along its entire course, especially in the boroughs of St. Marys and Ridgway. A brief description of the three plants named above is given herewith:

St. Mary's Tannery.

The St. Marys tannery of Kistler-Lesh and Company is located on Elk Creek, a tributary of Clarion River, in the borough of St. Marys, Elk County. The plant employs ninety-eight men, handling approximately three hundred and fifty hides or seven hundred sides daily. The lime non-acid process is used for unhairing. Two thousand one hundred and thirty pounds of lime, fifty-four pounds of sodium sulphide, two hundred and eight pounds of caustic soda and five hundred and fifty-four pounds of sulphuric acid are used daily. The approximate estimate of the average daily amount of wastes discharged from this plant into Elk Creek is one hundred and twenty-five thousand gallons.

The waste is highly colored, thick in composition and contains a considerable amount of lime, dirt, tannin, sulphur compounds, salts, grease, oils, manure, blood and other putrefactive matter. No attempt is made to separate the solids from the liquid wastes and all are discharged untreated into the stream.

Millville-Corbett Company.

The acetone plant of the Millville-Corbett Company is located on Elk Creek, a tributary of the Clarion River, at St. Marys, Elk County. It employs about sixty-five men in the manufacture of ace-

tone, derived by distillation from the acetate of lime obtained from chemical plants operating nearby. Condensing water is discharged into the stream. At the time of inspection no evidence of other wastes was observed, but it was ascertained that once a week the stills are cleaned out, the liquid wastes carrying some "ketone" to the stream.

M. J. Corbett and Company.

This plant is located at St. Marys, in Elk County, near the head waters of Elk Creek, a tributary of the Clarion. Seventy cords of wood are burned daily, producing approximately seven hundred and twenty-five gallons of wood alcohol, three thousand bushels of charcoal, and fourteen thousand pounds of acetate of lime. The firm employs about sixty men and has its main office at Binghamton, N. Y. Three carloads of high-grade lime are used every month.

The alcohol stills are drained once daily, releasing about two thousand five hundred gallons of weak alcohol solution each time. A considerable amount of oil is noticeable in the waste, also a very strong odor of creosote. The plant obtains its water supply from wells, pumping continuously approximately one million one hundred and fifty-three thousand gallons daily. This supply is used largely for condensing purposes and with the waste from the alcohol stills represents all the wastes that reach the stream. Sludge from the lime tubs is collected and dumped on piles in the plant yard. All of the liquid wastes from the plant are discharged directly into the stream with no attempt at treatment.

INDUSTRIAL PLANTS ON THE EAST BRANCH.

The East Branch of the Clarion rises in the hills west of the town of Clermont, in McKean County, flows in a southwesterly direction and joins the West Branch at Johnsonburg in Elk County. The stream flows in a deep, narrow, boulder-covered valley, the surrounding country being desolate and partly covered with second growth timber. It is formed at Instanter, about twelve miles from the mouth, by the confluence of Instanter Creek and Seven Mile Run. The stream receives extensive wastes from a paper mill, tanneries and chemical plants, all at or below Instanter. There are no trade waste pollutions above this point.

At the confluence of the East and West Branches at Johnsonburg are located the paper mills of the New York and Pennsylvania Company. About seven miles up this stream at Middle Fork is located the Wright Chemical Company's plant, and at Straight ten miles above the mouth are located three chemical plants owned by T. H.

Quinn and Company, namely, the "Susquehanna," "Lackawanna" and "Straight Creek," plants. These four chemical plants are discharging into the stream a considerable amount of waste matter. Two miles above Straight at Instanter about twelve miles above the mouth of the stream is located the Instanter tannery of the Elk Tanning Company, which also empties wastes into the stream. The river at Johnsonburg presents an unusual feature, the west side being a dark purplish color from tannery and chemical plant wastes and the east side a milky color from the paper mill wastes. A brief description is herewith given of the plants named above.

The New York and Pennsylvania Company.

The New York and Pennsylvania Company owns and operates a pulp and paper mill, one of the largest plants of its kind in the State, at Johnsonburg, Elk County. It includes the Highland Paper Company, which is a part of this concern. These mills give employment to about fifteen hundred persons. This is the only paper mill located in the Clarion River basin, and a description is given of the methods employed in the manufacture of paper, and the character and approximate quantity of wastes emptied from this plant into the waters of the Clarion River.

Paper can be made from almost everything in the vegatable kingdom. Wood, owing to the amount available is the most extensively used and is the material utilized at Johnsonburg. It is one of the cheapest raw materials; but linen, cotton, esparto, jute and straw are also used at other plants.

Wood is composed of innumerable small fibers, cemented together by a resinous non-cellular substance. The fiber is composed of a chemical compound called "cellulose," and is the material used in practically all manufactured paper. Chestnut, birch, locust and cypress are the most desirable woods. There are three processes in use for the manufacture of wood pulp, the mechanical, the soda and the sulphite processes. This report will deal with only the soda and the sulphite processes, as these are employed at the plant here described.

Briefly, the manufacture of paper consists first in the preparation of the wood by grinding or chopping and treating with caustic soda or sulphite of lime to dissolve all but the fiber, which is then cooked, washed and dewatered to form what is called "stock." In the soda process this stock goes directly to "bleachers," while sulphite stock is made into bundles and may be stored if desired before further treatment. In the bleachers the stock is treated with bleach and sizing. It is then placed in the "beaters" where dyes and other ingredients are added to secure the desired quality of paper. The stock then goes to the paper machine, after which it is calendered, cut, sorted and packed for shipment.

The making of paper by the soda process will first be described, followed by a description of the sulphite process insofar as the treatment differs.

The Soda Process.

The wood after the bark has been removed is cut into lengths varying from two to three feet and reduced in a chopping machine to pieces from a quarter inch to an inch in length. These are screened and conveyed to the "digesters." In the digesters the chips are treated with caustic soda, requiring between 4,000 to 5,000 gallons of caustic liquor to about five cords of wood. After the digester has been filled with chips and liquor, a tight cover is put on and steam applied for a period of eight to ten hours. The liquor passing down through the wood and a perforated plate in the bottom of the digester is lifted by a pump to the top where it is again discharged over the wood, the liquor being thus kept in constant circulation during the entire process of what is known as "cooking." When the cooking has been completed, the pulp is forced by steam pressure into the "blow tank," where it strikes against a plate, separating the fibers. After passing through the above process the pulp is known as "stock."

The stock is then dumped from the "blow tank" into a "wash pan" and washed with weak liquor and hot water. This pan has a perforated bottom allowing the liquor and wash water to pass through freely, while the stock is held back. The "spent liquor" is collected in tanks to be used over again until considered too weak, after which it is returned to the soda-recovery plant.

In the soda-recovery process the liquor is concentrated by heating in a cylindrical chamber and then dried and calcined in rotary furnaces. These furnaces are lined with fire brick and built with a conical interior. The liquor enters at the back of the furnace and readily ignites. The resin, lignin and other substances from the wood contained in the liquor are burned out, producing "black ash." Each furnace will produce about 20,000 pounds of black ash per day. The ash contains 45 to 48 per cent. of soda and represents a recovery of 80 to 90 per cent. This ash is removed to the "leachers" by an endless chain or cars, where it is spread out in pans and washed with hot water. The residual "charcoal" is wasted to a dump or flushed into the stream, chiefly the latter. The carbonate of soda thus leached out is conveyed to the causticizing pans where the caustic liquor used in digesting the wood is made up. Here the carbonate of soda liquor is treated with lime and weak caustic liquor or fresh caustic soda until the proper strength is obtained. This "strong liquor" is drawn off and stored for use in the digesters. The residual sludge is washed with weak liquor to recover any remaining caustic and then wasted or burned to reclaim the lime.

After the stock has been washed it is put into a rapidly revolving rotary screen where the coarse material is taken out. A considerable amount of water is added as the stock goes from the wash pan to the screens. The stock then passes to the "wet machines" which roll the stock into sheets called "felt" removing about 40 per cent. of the water. The felt is cut into desired lengths, folded and conveyed into the "bleachers."

As the felt leaves the wet machines it has a brownish color and must be bleached to produce a pure white fiber for the best grades of paper. Chlorine or compounds of cholorine are used, usually chloride of lime. The bleaching solution is prepared in large iron tanks holding about two thousand pounds. These tanks are equipped with agitators by which the lumps are broken up, and after running for a period of twenty minutes, the liquor is allowed to settle and then drawn off into storage tanks. This is known as "strong bleach." The process is then repeated until practically all the chlorine has been taken into solution. This weaker liquor is run into separate tanks, to be used instead of water for making "strong bleach." The sludge consists of calcium hydrate and calcium carbonate and is discharged into the stream.

The bleach is then mixed with the stock in apparatus known as "bleachers" or "potchers," in which the stock is continuously agitated and heated by steam. To bring out the desired color the stock is sometimes treated with an alkali, and again treated with bleach. Sulphite and weak sulphuric acid, bisulphite liquor and hyposulphite of soda are used for this purpose, several or all of these being added during the bleaching process. After their use the stock must each time be re-washed.

After leaving the bleachers the stock is again washed in water and passes into the "beaters" where, by a beating and cutting action, the fiber is reduced to the desired fineness. Here to secure desirable qualities, numerous ingredients are added including "sizing," "fillers," dyes, etc.

In order that the paper may not easily absorb ink or water, various "sizing agents" are added. These are prepared on the premises. "Brown size" is prepared by boiling crushed rosin mixed with a solution of caustic soda, about twenty pounds of soda being used to each one hundred pounds of rosin, with salt at times added to increase the density. After the boiling the residual black liquor is drained into the stream.

In making up "heavy size" thirty-one gallons of boiling water are used, to which is added two hundred and twenty pounds of soda ash and two thousand pounds of rosin, producing three hundred gallons of size. The "white size" is made by heating two thousand gallons

of water to one hundred and seventy-five degrees Fahrenheit, to which is added sixty gallons of the "heavy size." This is then allowed to cool, producing a milk-white liquid.

Casein is the nitrogeneous substance in milk and is prepared for "sizing" by precipitating milk with magnesium sulphate or by heating it after sulphuric acid has been added. "Casein sizing" gives the paper a good finish and produces also an elastic fiber and increased weight.

"Animal size" is a preparation of glue mixed with heated water, with a small portion of alum added. This sizing is introduced, not at the "beaters," but later on at the paper machine.

Boiled starch is sometimes used as a "filler" and also to add strength. Sodium aluminate is at times used in the sizing process, also sodium silicate is used when a hard paper is wanted. The further addition of alum causes the precipitation of hydrated silicic acid, which produces a still harder finish desirable in writing paper.

There may be also added to the stock while in the "beaters" some cheap material, as china clay, agalite, pearl hardening, etc., to give the paper weight, make it less transparent and improve its surface. The addition of any of these materials is known in paper manufacturing as "loading the stock." Agalite and china clay are most commonly used. There is a large amount of clay wasted to the stream in preparing the china clay at this point.

Coloring for the different shades desired is usually mixed separately before it is added to the stock in the beaters. Various kinds of dyes are used in coloring paper, acid aniline dyes which are prepared with acid or alum, aniline dyes which are prepared in alkaline solutions, and substantation dyes which require no preparatory treatment at the paper mill.

From the "beaters" the stock goes to the paper machine where it is passed over a fine screen to remove any remaining impurities. A tendency toward frothing on this screen is prevented by the addition of alum or a mixture of linseed oil, turpentine and bleach. The further stages in the paper machine involve passing over vibrating wire cloth where much of the water is extracted, rolling, drying, application of "animal size" and further rolling and drying.

The paper, wound on reels, is then put through calendering rolls of various kinds to give the particular finish required. It is then cut into sheets, inspected and graded, counted and packed for shipment.

Sulphite Process.

The above description, as previously stated, covers the "soda process." In the sulphite process many of the stages are identical and only those will be described which involve differences.

In the sulphite or bisulphite process the intercellular substances of the wood are decomposed by the bisulphites of calcium and magnesium. At this plant the chemical compounds are prepared on the premises, the raw materials being sulphur and well-burned magnesia lime. Sulphur dioxide is prepared by burning sulphur with a limited supply of air. The gas passes through a cooler to the "absorption tanks" in which milk of lime has been placed and where the bisulphite liquid is formed. This liquor is drawn off into storage tanks whence the supply for the "digesters" is drawn.

The "digesters" in the sulphite process are lined with an acid-resisting material. A considerable amount of gas is released which is recovered by piping to a cooling tower where it is freed from steam and returned to the absorption tanks. In other respects the treatment in the digesters is the same as described under the soda process, except that the spent liquor is wasted.

Sulphite stock like soda stock is put through the "bleachers," but being fairly white, little or no bleach is applied, the treatment being confined to sizing, dyeing, etc. The remaining steps in the treatment are identical with the soda process.

The yield of paper pulp or stock from the various kinds of wood in their customary combinations, in pounds per cord, is approximately as follows:

Soda Process.

Kind of Wood.	Amount per Cord.
Poplar,	1,500 pounds
Spruce and poplar,	1,000 pounds
Poplar, basswood, pine and maple,	1,200 pounds
Poplar, basswood, pine and spruce,	1,000 pounds
Basswood,	1,000 pounds
Poplar, basswood and pine,	1,000 pounds
Hemlock, pine, beech and basswood,	1,000 pounds
Basswood and maple,	1,200 pounds

Sulphite Process.

Spruce,	1,300 pounds
Spruce and poplar,	1,000 pounds
Spruce, basswood and hemlock,	1,000 pounds
Hemlock,	800 pounds
Spruce and hemlock,	1,100 pounds

The above amounts are for "prepared" wood as it is delivered to the mill ready for grinding.

Water from the Clarion River is used at the plant and the paper company finds it necessary to operate a mechanical filter plant to obtain water clean enough for use in the manufacture of paper. Twenty million gallons of water are filtered daily. The raw water is pumped to large settling basins where it is treated with alum and bleach prior to filtration.

The waste products from these mills are carbonate of lime, hypochlorite of lime, charcoal, spent sulphite liquor, china clay and a small percentage of lignin, gum, etc., as well as some alum. About one hundred and five thousand pounds of calcium carbonate; ten thousand pounds of calcium hydrate containing about six hundred pounds of calcium hypochlorite, and fifty thousand pounds of carbon or charcoal are discharged into the river daily.

The spent liquors peculiar to the sulphite process are all wasted, as there is no partial method of recovery. The waste liquor coming from the daily consumption of one hundred and forty cords of spruce wood is discharged into the river. No estimate of the amount of this waste is available.

Eighty thousand pounds of white china clay are used in the paper mill daily, and of this amount fifteen thousand to twenty thousand pounds pass into the river as waste.

Wright Chemical Company.

This plant is located at Middle Fork, in Johns Township, Elk County, on the East Branch of the Clarion River. The plant employs about twenty-five men. Twenty cords of wood are used daily, producing approximately two hundred and twenty-five gallons of wood alcohol, nine hundred bushels of charcoal, and four thousand pounds of acetate of lime.

An effort is made to collect some of the tar and chemical oil for fuel purposes, but a considerable amount of these are run into an unlined basin excavated in the ground, approximately twenty-five feet square and five feet deep, having no outlet. The waste is supposed to seep through the ground or embankment, eventually reaching the stream nearby. However, much, if not all, of the waste overflows the sides and drains directly into the stream. A similarly constructed basin approximately thirty feet by forty feet and five feet deep is used for the condensing water and alcohol waste. At the time of inspection this waste had broken through one side of the embankment and was flowing freely into a ditch leading to the river.

A single wooden trough conveys the wastes from the various units to both basins, the flow to each being controlled by gates. At the time of the investigation the gate at the basin for the condensing water and alcohol waste was open and the tar and oil wastes were discharging into it, indicating that the basins are at times used interchangeably. The alcohol stills discharge about eight hundred gallons of spent liquor daily, together with the condensing water and other wastes. The lime sludge is dumped on piles in the plant yard.

T. H. Quinn and Company (Chemical Plants).

T. H. Quinn and Company, with offices in Olean, N. Y., own and operate three large chemical plants located at Straight Post Office, Jones Township, Elk County, on the banks of Straight Creek, a tributary of the East Branch of the Clarion River. The plants are known as the "Lackawanna," "Susquehanna" and "Straight Creek." The firm owns thousands of acres of timber land which, through protection from fire, is now covered with second growth timber. They also operate about twenty-seven miles of private railroad covering a large area of their holdings. These three plants together employ one hundred and twenty-five men.

Lackawanna Plant (T. H. Quinn and Company).

This plant burns forty cords of wood daily, producing about four hundred and fifty gallons of alcohol, one thousand seven hundred bushels of charcoal and eight thousand ponds of acetate of lime. The tar is used at times as fuel. The chemical oil is sold as a by-product. Natural gas is used as fuel in the retorts. The plant differs from others in the construction of the retorts, in that there is one large retort holding several cars instead of a number of small ones holding but one car each. The water supply is obtained from springs, wells and the head waters of Straight Creek.

The liquid wastes from this plant are collected in a sump and pumped into an earth basin about sixty feet long, forty feet wide and six feet deep. It was the intention to allow the wastes to seep through the ground and embankments and to retain all the tar and oil. The ground, however, is not porous, and at the time of the investigation the embankment was broken and the effluent flowing to the stream through this opening contained a considerable amount of oil and traces of tar. Approximately twelve hundred gallons of spent liquor from the alcohol stills, beside the condensing water and other wastes, are discharged through this basin daily.

Susquehanna Plant (T. H. Quinn and Company).

This is a typical chemical plant burning nineteen cords of wood a day and producing about two hundred and ten gallons of wood alcohol, eight hundred bushels of charcoal, and three thousand eight hundred pounds of acetate of lime. Natural gas and by-product tar are used as fuel. The chemical oil is collected and sold.

The wastes from this plant are collected in a sump and pumped into a circular earth basin about thirty feet in diameter and six feet deep, located near the edge of the creek on low and swampy ground.

There is no definite outlet from this basin, the liquids flowing through the porous embankment without effective treatment and thence directly to the stream. In addition to the condensing water and other wastes from engines and boilers, approximately six hundred gallons of alcohol wastes from the still pass through the basin. The lime sludge is dumped on a pile in the yard.

Straight Creek Plant (T. H. Quinn and Company).

This plant, one of the largest in the Clarion basin, is located near the head waters of the creek. It is a typical plant, burning sixty-six cords of wood daily and producing about seven hundred and forty gallons of wood alcohol, two thousand eight hundred bushels of charcoal, and thirteen thousand pounds of acetate of lime.

The wastes from this plant are collected in a sump and pumped into an earth basin, seventy feet long, forty feet wide and six feet deep, with no definite outlet. It is located near the bank of the stream in low and swampy ground. The treatment was not effective at the time of inspection, there being considerable oily waste noticeable entering the stream. Twenty-five hundred gallons of spent alcohol waste from the stills, beside condensing water and other wastes, discharge through the basin daily. Sludge from the lime tubs is collected and dumped on piles in the yard.

There is located near this plant a charcoal crushing works where the charcoal from the three plants is broken into various sizes or crushed into powdered form.

Instanter Tannery.

The Instanter tannery of the Elk Tanning Company is located at Instanter Village in Jones Township, Elk County, on Instanter Creek, a tributary of the East Branch of the Clarion River. The plant employs one hundred men, handling three hundred and twenty-five hides or six hundred and fifty sides daily. The lime non-acid unhairing process is used. Two hundred and ten pounds of soda, three hundred pounds of sulphuric acid and four hundred pounds of lime are used daily.

The approximate amount of liquid wastes discharging daily into the stream are as follows:

12,000	gallons,	Soaks.
2,200	gallons,	Limes.
13,500	gallons,	Hot water pools.
21,400	gallons,	Green stock pools.
15,000	gallons,	Wash and hide wheel.
12,100	gallons,	Hair washer.
3,400	gallons,	Bleach.
11,200	gallons,	Tail rocker liquor.
3,700	gallons,	Miscellaneous wastes.

The approximate total daily waste is ninety-five thousand gallons.

The spent tannin liquor from this plant is pumped into tanks excavated on the hillside about eight years ago in an attempt to secure purification by percolation through the ground. There are two of these circular pits about sixteen feet in diameter and ten feet deep arranged in sequence. The pits apparently produce little, if any, improvement in the character of the waste, as streams of the liquor with its characteristic color are clearly seen emanating from the hillside immediately below the pits, thence flowing directly to the creek. The pits were constructed by the paper company operating at Johnsonburg with a view of improving the quality of their water supply. Little, if any, attention is given to these pits by either the paper or tanning companies.

The other wastes from the plant are collected in a circular concrete sump sixteen feet in diameter and eight feet deep pumped into sedimentation basins, two in number, of earth construction, each one hundred and forty feet long, twenty-five feet wide and three and one-half feet deep. No attention is given to these basins. At the time of inspection both were full of sludge, the banks broken and the waste was flowing over, flooding the surrounding ground for a considerable distance and reaching the stream in practically the same condition as when it was discharged from the plant.

INDUSTRIAL PLANTS ON THE WEST BRANCH.

The West Branch of the Clarion River rises in the central part of McKean County, near the southern boundary, flowing in a southerly direction to its confluence with the East Branch at Johnsonburg. The West Branch is formed by the junction of Wilson Run and West Branch Creek at Wilcox. The stream flows through a valley covered with second growth timber near its source, but extremely barren and desolate near its mouth. Very little of the land is used for farming. Small villages are located along its banks, the inhabitants depending for a livlihood on the tanneries and chemical plants operating there.

On the West Branch, at its junction with the East Branch at Johnsonburg, is the Rolfe tannery of Kistler-Lesh and Company. Seven miles above the mouth of Wilcox is located the Wilcox tannery of the Elk Tanning Company. At Dahoga, on Wilson Run, about two miles above Wilcox, is located the plant of the McKean Chemical Company, and five miles above Wilcox, at Sergeant, are the works of the Otto Chemical Company. At East Kane, about nine miles above Wilcox, is located the chemical plant of the James Manufacturing Company. On Seven Mile Run, a tributary of the West Branch, is located the Penn Chemical Company's plant at Huntchins. A brief description of these plants is given below.

Rolfe Tannery.

The Rolfe tannery of Kistler-Lesh and Company is located at Johnsonburg, Elk County, on the West Branch of the Clarion River. This plant employs one hundred and eighteen men, handling two hundred and twenty-nine hides or five hundred and seventy-eight sides a day. The lime non-acid process for unhairing is used. One thousand one hundred and fifty-three pounds of lime, thirty-six pounds sodium sulphide, four hundred and eighty-six pounds sulphuric acid and one hundred and seventy-one pounds of caustic soda are used daily.

No sedimentation beds have been built nor any effort made to remove the solids from the liquid wastes before discharging them into the stream. The approximate total amount of waste daily discharged into the Clarion River from this plant is ninety-five thousand gallons.

The waste is a dark reddish color containing a considerable amount of lime, dirt, dissolved hair substances, tannin, grease, oils, chromium salts, sulphites, manure, blood and other putrefactive matter.

Wilcox Tannery.

The Wilcox tannery of the Elk Tanning Company is located at Wilcox Village, Jones Township, Elk County, on the West Branch of the Clarion River. This plant employs one hundred and seventy-five men, handling seven hundred hides or fourteen hundred sides daily. One hundred and twenty-five pounds of sulphuric acid, three hundred and thirty pounds of caustic soda and six hundred pounds of lime are used daily. The lime non-acid unhairing process is used.

The daily amount of waste from the various units is as follows:

22,500 gallons,	Soaks.
42,200 gallons,	Limes.
71,800 gallons,	Hide mills.
19,300 gallons,	Hot water pools.
8,700 gallons,	Rinse pools.
39,900 gallons,	Wash and hide mills.
7,500 gallons,	Unhairing and fleshing machine.
18,700 gallons,	Hair washer.
4,100 gallons,	Bleach.
41,500 gallons,	Tail rocker liquor.
1,500 gallons,	Miscellaneous wastes.

A total of approximately 278,000 gallons of wastes is discharged into the Clarion River daily.

The wastes flow in opposite directions from about the middle of the works through a ditch 3½ to 4 feet wide and 4 feet deep. The ditch extends to the south about three-quarters of a mile, with baffle board weirs placed every fifty feet for a distance of fifteen hundred feet, the ditch being clear of artificial obstructions from this point

to the river. The ditch to the north is about nine hundred feet long with baffle weirs every fifty feet for its entire length. The sludge is allowed to collect in these ditches for a nominal period of three months, when it is removed, allowed to dry and then hauled to a dump in the yards or removed for fertilizer. At the time of the investigation the spaces between the baffles in the ditch were filled with sludge and the wastes were flowing over, carrying a considerable amount of the solids to the river. At present all the spaces are allowed to fill before any sludge is removed.

McKean Chemical Company.

The plant of this company is located at Dahoga Village, in Jones Township, Elk County, on Wilson Run, a tributary of the Clarion River. The company employs about sixty-five men. Seventy cords of wood are burned daily, producing approximately eight hundred gallons of wood alcohol, three thousand bushels of charcoal and fourteen thousand pounds of acetate of lime.

This plant has two basins of earth construction each fifty feet long, forty feet wide and six feet deep, with no outlets. Wastes from the plant are collected in a sump and pumped to these basins. Condensing water from the alcohol stills is discharged directly into the stream. The alcohol still wastes amount to about two thousand five hundred gallons of spent liquor daily. This liquor and the wastes from the mixing tubs and other units in the plant are discharged into the basin described above. Sludge from the lime tubs is collected and dumped on piles in the plant yard.

Otto Chemical Company.

The plant of this firm is located at the village of Sergeant (Burrows Postoffice), in Wetmore Township, McKean County, on Wilson Run, a tributary of the West Branch of the Clarion River. The plant burns twenty cords of wood, producing about two hundred gallons of wood alcohol, four thousand pounds of acetate of lime and nine hundred bushels of charcoal. About sixteen men are given steady employment. The charcoal is crushed into various sizes for the market.

The wastes are discharged through a trough and tyelve-inch pipe of terra cotta and cast iron to a basin of earth construction forty feet long, thirty feet wide and six feet deep. This is located on the opposite side of the stream approximately one thousand feet below the plant. The basin was in good condition, showing no signs of overflowing, and the surrounding ground surface was free from seepage.

Approximately six hundred gallons of spent liquor from the alcohol stills, together with the wastes from the mixing tubs and separators, are discharged into the basin daily. Condensing water is discharged directly into the stream. Sludge from the lime tubs is collected and dumped on piles in the plant yard.

James Manufacturing Company.

This chemical plant is located at East Kane, in Wetmore Township, McKean County, on Wilson Run, a tributary of the West Branch of the Clarion River. The company employs about fifteen men. Twenty cords of wood are burned daily, producing approximately two hundred and twenty-five gallons of wood alcohol, four thousand pounds of acetate of lime and eight hundred and fifty bushels of charcoal. The basin which receives the waste is of earth construction, two hundred feet long, fifty feet wide and five feet deep. It has been badly neglected, and at the time of this inspection the embankment was broken down and all the wastes were overflowing into a ditch along the Pennsylvania Railroad tracks and thence into the stream. Care is not taken in operating the tar separators with the result that considerable tar and oil was running through the basins into the stream.

In addition to the condensing water, wastes from the mixing tubs and tar separators and six hundred gallons of spent liquor from the alcohol stills are discharged through the basin into the stream daily. The lime sludge is collected and dumped on piles in the plant yard.

Penn Chemical Company.

This plant is located at Hutchins Village, Sergeant Township, McKean County, on Seven Mile Run, a tributary of the West Branch of the Clarion River. The plant burns twenty-five cords of wood daily, producing approximately eleven hundred bushels of charcoal, three hundred gallons of wood alcohol and five thousand pounds of acetate of lime.

The wastes consist of about eight hundred gallons of spent alcohol liquor daily beside condensing water and wastes from the lime tubs and tar separators. The basin receiving these wastes is of earth construction about eighty-five feet long, sixty feet wide and six feet deep. There was no seepage observed on the surface of the ground surrounding the basin, and no evidence of overflowing could be seen.

CONCLUSIONS.

From the foregoing description it appears that along the Clarion River and its branches there are eleven chemical plants, eight tanneries and one large paper mill, all of which discharge into the stream

wastes which tend to render the water unfit for human consumption, dangerous to live stock and a local nuisance to the dwellings along the banks of the river.

In addition to the wastes from the plants described there is a large amount of coal mine drainage discharged from mines along Little Toby Creek, which enters the Clarion at Portland Mills, a few miles below Ridgway. On Piney Creek and Licking Creek, tributaries of the Clarion entering below Clarion borough, there are also a number of coal mines. There are 41 mines on Little Toby Creek, with an estimated discharge of mine drainage amounting to 8,850 gallons per minute. On Piney Creek there are 7 mines with an estimated discharge of 750 gallons per minute. On Licking Creek there are ten mines discharging about 900 gallons per minute. There are also two or three small mines which contribute some drainage to Elk Creek. There are, therefore, about 60 mines in all contributing upward of 10,500 gallons of mine drainage per minute to the waters of the Clarion River, very little of which enters the river proper above Portland Mills.

Before presenting a summary of the quantities of industrial wastes it should be noted that the spent alcohol wastes are the only ones from the chemical plants for which a reliable estimate can be given, and they constitute only a portion of the polluting liquids wasted at these plants. All of these industrial plants are at or above Hallton.

Along the Clarion River proper from Hallton up to Johnsonburg there are four tanneries and one chemical plant. The tannery wastes are estimated at about 507,000 gallons daily, and the spent alcohol wastes from the chemical plant at 1,800 gallons daily. On Elk Creek there are two chemical plants and one tannery, the spent alcohol wastes from the chemical plants amounting to about 2,000 gallons daily, and the tannery wastes to 125,000 gallons daily. On the East Branch there are four chemical plants, one tannery and a large paper mill. The spent alcohol wastes from the chemical plants are estimated at 4,900 gallons daily, the tannery wastes 189,500 gallons daily, and the paper mill wastes at 25,000,000 gallons daily. Along the West Branch there are four chemical plants and two tanneries contributing about 4.500 gallons of spent alcohol wastes daily from the chemical plants, and 278,000 gallons daily of tannery wastes. The spent alcohol wastes from the chemical plants amount to a total of about 13,200 gallons daily, the tannery wastes to about 1,100,000 gallons daily, and the paper mill wastes 25,000,000 gallons daily. Since the paper mill and many of the smaller plants draw large quantities of water from the river for industrial purposes, it is obvious that the liquid wastes noted above include wastes discharged from the upper

plants and used as water supply at others further down. The minimum measured flow of the Clarion River at Clarion was 50 cubic feet per second and occurred in October 1908.

Such attempts as have been made by the owners of the various plants to effect the purification of their trade wastes have been crude and ineffective. The works installed for this nominal purpose could not be expected to accomplish satisfactory results even with careful attention to operation; while, as a matter of fact, the interest taken in the operation of these works has been occasional and transitory in nearly every instance.

In view of these circumstances, and since, with the exception of a portion of the wastes from the paper mill, namely, the sulphite wastes, the polluting liquids from all of these industrial plants are capable of effective treatment at a cost not prohibitive, the Department will continue its investigations with a view of requiring the cessation of this pollution of the waters of the Clarion River.

OPERATION OF THE WATER FILTRATION PLANT OF THE ARMSTRONG WATER COMPANY, KITTANNING.

Following a disastrous epidemic of typhoid fever in Kittanning, Armstrong County during the latter part of 1914, the Commissioner of Health, after investigation by officers of the Department, issued a decree to the Armstrong Water Company requiring the submission of plans for remodeling the filter plant maintained by the company for the purification of water supplied to the public in the borough. The company did not comply with the provisions of the decree, and finally, on November 18, 1915, the Commissioner of Health, in order that the public might be assured of all protection possible under the circumstances and to place an end to procrastination on the part of the company, notified the company that unless the plans for improvements were submitted within twenty-four hours the State would take over the operation of the works.

The water company did not submit the plans within the twenty-four hour period, and accordingly on the following day a representative of the Department was sent to Kittanning to supervise the operation of the filtration plant and to submit daily reports in order that the Department might be fully informed of the degree of purification being effected.

Frequent analyses of the water indicated that from the time the plant was placed under immediate supervision of the Department until the end of the year no imperfectly purified water passed the filters. This is further attested by the fact that there were no cases of typhoid fever or dysentery reported in the borough which could be attributed to a polluted public water supply.

ELIMINATION OF GAS WORKS WASTE POLLUTION OF THE SCHUYLKILL RIVER.

Gas works at the various boroughs and cities on the Schuylkill River and its tributaries had contributed wastes to the stream for many years, causing a tarry and oily taste and odor in the river and in the public water supplies drawn therefrom at various points along its course. At times, especially in the late fall, the trouble was especially noticeable, and the tar interfered with the operation of filter plants. Consequently, the Department on several occasions in past years has investigated and secured marked improvement in the conditions each time, with the result that in 1915 no complaints were received. In order to forestall the possibility of trouble on this account, an investigation of all of the gas plants along the Schuylkill and tributary streams was made a short time prior to the time when trouble had been experienced in previous years. This investigation was made by a Department representative in the latter part of September and the early part of October, 1915.

It was found that at most of the plants the gas companies had willingly adopted the suggestions of the Department and installed separators in which the tarry wastes were settled out and the effluent water returned to the scrubbers by means of a small circulating pump. Where this arrangement was properly installed and carefully operated no wastes at all were discharged into the stream. At a few plants there was either carelessness in the operation or a part of the system was not completed, so that at times objectionable wastes were discharged. At two plants the matter had been entirely neglected. The necessary corrective measures were suggested by the representative in the field, and in each case the companies took steps to carry out the suggestions. Communications were also sent to the various companies requiring in each instance such improvements as were necessary.

The tarry deposits from these sources had been discharged into the river for many years and were frequently stirred up by the flood waters. It is probable that some occasional trouble from this source will be experienced at the water supplies down the stream until the existing deposits shall have been eliminated. As a result of the work of the Department up to date, combined with future periodic inspection work, it is expected that no further cause for complaint will occur.

STORM DAMAGE INVESTIGATIONS.

Storm at Mount Joy August 5, 1915.

A heavy rain storm at Mount Joy on August 5, 1915, resulted in a flood in the Little Chiquesalunga Creek, which forms the source of supply to the borough. A Department representative was immediately sent there. It was found that the pumping station had been flooded and put out of service temporarily, but no serious damage was done. Since there was an ample supply of water stored in the reservoir, instructions were given to discontinue pumping as long as possible without interrupting the supply to the consumers and to use a disinfectant when pumping should be resumed.

The Tornado of August 21, 1915.

On August 21, 1915, a severe storm occurred which did considerable damage in York, Dauphin, Lebanon and adjoining counties. The towns most seriously affected were Hanover, York, Mount Holly, Hummelstown, Hershey and Annville. On receipt of reports that extensive damage had been done at these places Department officers at once proceeded to each of them and made a thorough investigation, with a view of taking such measures as might be necessary for the prevention of a possible spread of disease. The water supplies were carefully examined and sanitary conditions looked into. At Hanover and Annville the storm culminated in tornadoes, which caused a large amount of property loss, and considerable damage was done by the wind at other places. The accompanying rain was very heavy, but the flood damage was slight and occurred only at two or three points. In no case was there any damage to the water supplies which occasioned any inconvenience or special danger. The Department officers instructed those in charge of the waterworks systems to exercise especial vigilance and gave instructions to local health authorities to remove dead animals, disinfect and clean out exposed privy vaults, and exercise all possible diligence in cleaning up debris, to the end that no outbreak of disease might occur.

NATIONAL GUARD ENCAMPMENT GROUND—MOUNT GRETNA.

During July, 1915, the Department made the customary inspection of the water supplies at Mount Gretna used or available for use by the National Guard during the summer encampment. The various available sources of water supply at Mount Gretna have been described in detail in previous annual reports with the exception of

a drilled well placed in operation during the current year, 1915. Briefly, these public supplies consist of a drilled well with air lift on the old encampment field, a new drilled well at the rifle range, and an auxiliary spring supply at the rifle range, these three sources being now owned and operated by the State. At the Chautauqua Grounds there is a drilled well supply, another at the United Brethren campmeeting grounds, and a gravity spring water supply at the railroad station and picnic grounds, these three supplies being privately owned. A surface supply north of the railroad tracks formerly used in connection with the encampment system has been disconnected, but the pumping equipment is still in place. This source of supply has been the subject of previous correspondence with the Adjutant General's Department and the owners, in which the Department has directed that the supply be not used without adequate treatment.

The railroad spring supply was improved in 1914 at the order of the Department so as to entirely exclude surface water. A cross connection near the railroad station permits the use of this water in a portion of the encampment field, and it has been occasionally so used to augment the drilled well supplies.

The new drilled well at the rifle range was the subject of a permit issued by the Department on April 21, 1915, to the Adjutant General's Department. The distributing system at the encampment grounds has been largely extended so that there is now an extensive network of pipes reaching practically all portions of the State land available for camping purposes. There is a cross connection between the distributing systems served by the rifle range well and the old encampment field well.

The State has recently acquired a large tract of land including the encampment field and "fountain head field," which together with the rifle range previously owned by the State comprise nearly 2,000 acres. During 1915 two encampments were held, one from July 9th to 17th, consisting of three brigades of infantry or about 7,500 men, and one from July 24th to 31st, comprising cavalry troops from Pennsylvania, New Jersey and Maryland with two companies of United States Cavalry, about 1,200 men and a like number of horses.

A Department representative was on practically constant duty during the encampment observing conditions and advising with the military authorities, to the end that a safe and adequate supply should be maintained. During the investigation thirty-eight samples of water were taken at various times covering all the supplies available for use by the troops. A small auxiliary reservoir at the rifle range was found to need cleaning and its use was discontinued.

IV. FIELD INSPECTION.

There are three distinct kinds of work performed by the sanitary inspectors.

The first is a detailed work of stream preservation, and is on the upland watersheds sparsely populated and of a small area, where inspection and patrol can easily prevent the waters of the State from being polluted, except by accident.

The second is the less particular work on large watersheds whereon may be located villages, towns and cities, the drainage of which goes into a stream subsequently used as a source of water supply. The refinements in sanitation readily accepted as practicable for the upland watersheds would be impracticable if enforced on these lower watersheds. In the latter instances two safeguards are necessary; the diminution of sewage pollution as far as practicable and the filtration of the water supply.

The third kind of work of the field officers relates to various insanitary conditions with respect to disposal of household wastes and causes of disease and mortality within or without villages, boroughs and cities, more fully mentioned under "General Sanitation."

The improvement of watersheds whose yield is wholly or materially drawn upon for public domestic consumption has demanded and received attention in three hundred and fifty-five instances, involving the water supply of sixteen cities, two hundred and forty-two boroughs, twenty-seven of which are county seats, sixty villages, two State institutions, seventeen townships and eighteen industrial supplies.

14. IMPROVEMENT OF WATERSHEDS.

There were inspected or reinspected during the year ninety-two thousand six hundred and twenty-four properties. Of the ninety-two thousand six hundred and twenty-four properties, all were found satisfactory except twenty-four thousand six hundred and sixty-six. Abatement of nuisances totalling fifteen thousand eight hundred and ninety-three were effected on eight thousand four hundred and forty-five of these properties. At the close of the year there were sixteen thousand two hundred and eighty-two properties upon which nuisances remained unabated.

The sixteen cities whose water supplies were inspected or reinspected are as follows:—

1. The City of Allentown, Lehigh County, is supplied with water from springs. The drainage area is uninhabited. There is an emergency supply for fire purposes taken from the Little Lehigh River.

2. The City of Altoona, Blair County, is partially supplied with water from Burgoon Run and Kittanning Run. One unsatisfactory property on the watershed of Burgoon Run was reinspected and one pollution upon the unsatisfactory property was abated, leaving all properties on the watershed in a satisfactory condition at the close of the year. Thirty-one unsatisfactory properties on the watershed of Kittanning Run were reinspected and fifty-five pollutions upon twenty-eight unsatisfactory properties were abated, leaving three properties on the watershed in an unsatisfactory condition at the close of the year.

3. The City of Bradford, McKean County, is supplied with water from Gilbert Run and Marilla Creek. The watersheds are uninhabited. There is an emergency supply taken from eleven drilled wells.

4. The City of Chester, Delaware County, is supplied with filtered water by the New Chester Water Company from the Delaware River.

5. The City of Connellsville, Fayette County, is partially supplied with water by the Connellsville Water Company from the Youghiogheny River and McCoy Run. One hundred and seventy-five of the properties on the Youghiogheny watershed were inspected and one hundred and seventy-two of them were found to be in an unsatisfactory condition. Thirty-one pollutions were abated upon ten of the unsatisfactory properties, leaving one hundred and sixty-two unsatisfactory properties on the watershed at the close of the year.

The eight properties on the watershed of McCoy Run were inspected and found to be in a satisfactory condition.

6. The City of Easton, Northampton County, is supplied with water by the South Easton Water Company from artesian wells, springs and filtered water from the Delaware River, by the Lehigh Water Company with filtered water from the Delaware River, and by the Easton Water Company from springs. The drainage area of the springs is uninhabited.

7. The City of Johnstown, Cambria County, is supplied with water by the Johnstown Water Company from Salt Lick, Laurel, Wild Cat, St. Clair, and Dalton Runs, Mill Creek and the North Fork of Bens Creek; by the Manufacturers Water Company from Hinckston Run, and by the Morrellville and Cambria Borough Water Company from Strayer Run.

The sixty properties on the watershed of Salt Lick Run were inspected and all but thirteen were found to be in a satisfactory condition. Ten pollutions were abated on five of the unsatisfactory properties, leaving eight properties in an unsatisfactory condition at the close of the year. The thirty-six properties on the watershed of Laurel Run were inspected and all but six were found to be in a satisfactory condition. Eight pollutions were abated on five of the unsatisfactory properties, leaving one property in an unsatisfactory condition at the close of the year. The one property on the watershed of Wild Cat Run was inspected and found to be in an unsatisfactory condition. One pollution was abated and there remained one pollution unabated upon this property at the close of the year. The thirty-one properties on the watershed of St. Clair Run were inspected and all but three were found to be in a satisfactory condition. Two pollutions were abated upon two of the unsatisfactory properties, leaving two unsatisfactory properties on the watershed at the close of the year. The Twenty-three properties on the watershed of Mill Creek were inspected and all but one were found to be in a satisfactory condition. The one unsatisfactory property remained unchanged at the close of the year. The thirteen properties on the watershed of Dalton Run were inspected and all but four were found to be in a satisfactory condition. Two pollutions were abated upon two of the unsatisfactory properties, leaving two properties in an unsatisfactory condition a the close of the year. The forty-four properties on the watershed of the North Fork of Bens Creek were inspected and all but thirteen were found to be in a satisfactory condition. Ten pollutions were abated upon seven of the unsatisfactory properties, leaving eight properties in an unsatisfactory condition at the close of the year.

The one hundred and twenty-five properties on the Hinckston Run watershed were inspected and all but thirty-eight were found to be in a satisfactory condition. Forty-five pollutions were abated on twenty-five of the unsatisfactory properties, leaving twenty-one properties in an unsatisfactory condition at the close of the year. The fifteen properties on the Strayer Run watershed were inspected and all but three were found to be in a satisfactory condition. Five pollutions were abated on the three unsatisfactory properties, leaving all properties on the watershed in a satisfactory condition at the close of the year.

8. The City of Lancaster, Lancaster County, is supplied with water from the Conestoga Creek. The fifteen unsatisfactory properties on the watershed were reinspected and four pollutions were abated upon two of the unsatisfactory properties, leaving thirteen properties on the watershed in an unsatisfactory condition at the close of the year.

9. The City of Lock Haven, Clinton County, is partially supplied with water from McElhattan Run. The thirty-four properties on the watershed were inspected and all but four were found to be in a satisfactory condition. Five pollutions were abated on the four unsatisfactory properties, leaving all properties in a satisfactory condition at the close of the year.

10. The City of New Castle, Lawrence County, is supplied with water by the City of New Castle Water Company from the Shenango River. The three unsatis-

factory properties on the watershed were reinspected and three pollutions upon two of the unsatisfactory properties were abated, leaving one property in an unsatisfactory condition at the close of the year.

11. The City of Philadelphia, Thirty-fifth and Forty-first wards, are partially supplied with water by the Holmesburg and Disston Water Companies from Pennypack Creek. Eleven hundred and thirty-five of the properties on the watershed were inspected and all but one hundred and sixty-two were found to be in a satisfactory condition. One hundred and thirty-seven pollutions were abated upon one hundred and eight of the unsatisfactory properties, leaving fifty-four unsatisfactory properties on the watershed at the close of the year.

12. Certain Philadelphia suburbs are supplied with water by the Springfield Consolidated Water Company from Pickering, Crum and Neshaminy Creeks. Seven unsatisfactory properties on the watershed of Pickering Creek were reinspected. Seven pollutions were abated upon five of the unsatisfactory properties, leaving two properties on the watershed in an unsatisfactory condition at the close of the year. Twenty-six unsatisfactory properties on the watershed of Crum Creek were reinspected. Twenty-nine pollutions were abated upon twelve of the unsatisfactory properties, leaving fourteen properties on the watershed in an unsatisfactory condition at the close of the year. Eleven hundred and fifty-eight of the properties on the Neshaminy Creek watershed were inspected and all but three hundred and forty-eight were found to be in a satisfactory condition. Four hundred and sixty pollutions were abated upon two hundred and fifty-six of the unsatisfactory properties, leaving ninety-two properties on the watershed in an unsatisfactory condition at the close of the year.

13. The City of Reading, Berks County, is partially supplied with water from Maiden Creek and Egelman Reservoir. Three hundred and nine of the properties on the Maiden Creek watershed were inspected and all but eighty-eight were found to be in a satisfactory condition. One hundred and forty-four pollutions were abated upon sixty-six of the unsatisfactory properties, leaving twenty-three properties on the watershed in an unsatisfactory condition at the close of the year. The one unsatisfactory property on the Egelman Reservoir watershed was reinspected and the two pollutions upon this property were abated, leaving all properties on the watershed in a satisfactory condition at the close of the year.

14. The City of Scranton, Lackawanna County, is partially supplied with water by the Scranton Gas & Water Company from Roaring Brook and Leggett Creek. Three hundred and forty-six of the properties on the Roaring Brook watershed were inspected and all but forty-seven were found to be in a satisfactory condition. Forty pollutions were abated upon thirty-three of the unsatisfactory properties, leaving fourteen properties on the watershed in an unsatisfactory condition at the close of the year. The five unsatisfactory properties on Leggett Creek watershed were reinspected and seven pollutions were abated upon four of the unsatisfactory properties, leaving one property in an unsatisfactory condition at the close of the year.

15. The City of Wilkes-Barre, Luzerne County, is partially supplied with water by the Spring Brook Water Supply Company from Harvey, Pine and Panther Creeks. The nine unsatisfactory properties on the watershed of Harvey Creek were reinspected and five pollutions were abated upon two of the unsatisfactory properties, leaving seven properties in an unsatisfactory condition at the close of the year. One unsatisfactory property was inspected on the watershed of Pine Creek and remained unchanged at the close of the year. One unsatisfactory property was inspected on the watershed of Panther Creek and remained unchanged at the close of the year.

16. The City of York, York County, is supplied with water by the York Water Company from Codorus Creek. One hundred and fifty-nine unsatisfactory properties on the watershed were reinspected. Seventy-five pollutions were abated upon thirty-five of the unsatisfactory properties, leaving one hundred and twenty-four properties on the watershed in an unsatisfactory condition at the close of the year.

The twenty-seven boroughs, which are county seats, whose water supplies were inspected, or reinspected, are as follows:—

1. Bloomfield Borough, Perry County, is supplied with water by the Bloomfield Water & Sewer Company from springs. The drainage area is uninhabited.

2. Bloomsburg Borough, Columbia County, is supplied with water by the Bloomsburg Water Company from Fishing Creek. Seven hundred and ten of the properties on the watershed were inspected and all but forty-five were found to be in a satisfactory condition. Sixty-six pollutions were abated upon thirty-seven of the unsatisfactory properties, leaving eight of the properties in an unsatisfactory condition at the close of the year.

3. Carlisle Borough, Cumberland County, is supplied with water by the Carlisle Gas & Water Company from Conodoguinet Creek. The seventy-three unsatisfactory properties on the watershed were reinspected. Sixty-five pollutions were abated upon thirty-nine of the unsatisfactory properties, leaving thirty-four properties on the watershed in an unsatisfactory condition at the close of the year.

4. Chambersburg Borough, Franklin County, is supplied with water from Hosack and Birch Runs. The twelve camps on the watersheds were inspected and all but one were found to be in a satisfactory condition. The one unsatisfactory camp remained unchanged at the close of the year.

5. Clearfield Borough, Clearfield County, is supplied with water by the Clearfield Water Company from Moose and Montgomery Creeks. Fourteen camps on the watersheds were inspected and found to be in a satisfactory condition. Two of the properties on the watersheds were inspected and found to be in a satisfactory condition.

6. Coudersport Borough, Potter County, is supplied with water by the Consolidated Water Company of Coudersport from six springs and two drilled wells. The drainage area of four springs is uninhabited. Two of the springs are located in the borough and are protected from pollution.

7. Emporium Borough, Cameron County, is supplied with water by the Emporium Water Company for emergency purposes from West Creek. The one hundred and fifty-seven properties on the watershed were inspected and all but thirty-one were found to be in a satisfactory condition. Forty-seven pollutions were abated upon twelve of the unsatisfactory properties, leaving nineteen properties on the watershed in an unsatisfactory condition at the close of the year.

8. Gettysburg Borough, Adams County, is partially supplied with water by the Gettysburg Water Company from Marsh Creek. The one unsatisfactory property on the watershed was reinspected and the one pollution upon this property was abated, leaving all properties on the watershed in a satisfactory condition at the close of the year.

9. Hollidaysburg Borough, Blair County, is supplied with water by the Blair Gap Water Supply Company from Blair Gap Run. The twenty-four properties on the watershed were inspected and all but five were found to be in a satisfactory condition. Four pollutions were abated upon four of the unsatisfactory properties, leaving one property on the watershed in an unsatisfactory condition at the close of the year.

10. Honesdale Borough, Wayne County, is supplied with water by the Honesdale Consolidated Water Company from Cadjaw Pond and Balcom Creek. The seven properties on the watershed of Cadjaw Pond were inspected and found to be in a satisfactory condition. The thirty-eight properties on the watershed of Balcom Creek were inspected and all but nine were found to be in a satisfactory condition. Twelve pollutions were abated upon six of the unsatisfactory properties, leaving three properties in an unsatisfactory condition at the close of the year.

11. Huntingdon Borough, Huntingdon County, is supplied with water by the Huntingdon Water Supply Company from Standing Stone Creek. Thirty-eight of the properties on the watershed were inspected and thirty-three were found to be in an unsatisfactory condition. Thirty-two pollutions were abated upon twenty-three unsatisfactory properties, leaving fourteen properties in an unsatisfactory condition at the close of the year.

12. Indiana Borough, Indiana County, is supplied with water by the Clymer Water Company of Indiana, from Two Lick Creek. The seven unsatisfactory properties on the watershed were reinspected. Seventeen pollutions were abated upon six of the unsatisfactory properties, leaving one property in an unsatisfactory condition at the close of the year.

13. Lewisburg Borough, Union County, is supplied with water by the White Deer Mountain Water Company from White Deer Creek. The three properties and twenty camps on the watershed were inspected and found to be in a satisfactory condition.

14. Lewistown Borough, Mifflin County, is supplied with water by the Lewistown-Reedsville Water Company from Treaster, Coopers Gap and Laurel Runs. Twenty camps on the watersheds were inspected and found to be in a satisfactory condition.

15. Media Borough, Delaware County, is supplied with water from Ridley Creek. The six unsatisfactory properties on the watershed were reinspected. Nine pollutions were abated upon five of the unsatisfactory properties, leaving one property in an unsatisfactory condition at the close of the year.

16. Mercer Borough, Mercer County, is supplied with water by the Mercer Water Company from Otter Creek. The sixteen unsatisfactory properties on the watershed were reinspected. Seven pollutions were abated upon six of the unsatisfactory properties, leaving ten properties in an unsatisfactory condition at the close of the year.

17. Middleburg Borough, Snyder County, is supplied with water by the Middleburg Water Company from springs. The drainage area is uninhabited.

18. Milford Borough, Pike County, is supplied with water by the Milford Water Company from springs. The drainage area is uninhabited.

19. Montrose Borough, Susquehanna County, is supplied with water by the Consumers Water Company of Montrose, Pa., from Jones Lake. The thirteen properties on the watershed were inspected and all but two were found to be in a satisfactory condition. Two pollutions were abated upon one of the unsatisfactory properties, leaving one property in an unsatisfactory condition at the close of the year.

20. Norristown Borough, Montgomery County, is supplied with filtered water by the Norristown Insurance & Water Company from the South Channel of the Schuylkill River.

21. Stroudsburg Borough, Monroe County, is partially supplied with water by the Stroudsburg Water Supply Company from Flagler Run and Broadhead Creek. The two unsatisfactory properties on Flagler Run watershed were reinspected. Three

pollutions were abated upon the two unsatisfactory properties, leaving all properties on the watershed in a satisfactory condition at the close of the year. The five unsatisfactory properties on the Broadhead watershed were reinspected. Three pollutions were abated upon three of the unsatisfactory properties, leaving two properties in an unsatisfactory condition at the close of the year.

22. Sunbury Borough, Northumberland County, is supplied with water by the Sunbury Water Company from Little Shamokin Creek. The three hundred and sixteen properties on the watershed were inspected and all but thirty-one were found to be in a satisfactory condition. Twenty-five pollutions were abated upon eighteen of the unsatisfactory properties, leaving sixteen properties in an unsatisfactory condition at the close of the year.

23. Tionesta Borough, Forest County, is supplied with water by the Tionesta Water Supply Company from a spring. The drainage area is uninhabited.

24. Towanda Borough, Bradford County, is partially supplied with water by the Towanda Water Company from Towanda Creek. The one unsatisfactory property on the watershed was reinspected and the one pollution upon the one unsatisfactory property was abated, leaving all properties on the watershed in a satisfactory condition at the close of the year.

25. Uniontown Borough, Fayette County, is supplied with water by the Uniontown Water Company from Shutes, Hutchinson and Bennington Runs. The ten properties on the watershed of Shutes Run were inspected and all but four were found to be in a satisfactory condition. Seven pollutions were abated upon three of the unsatisfactory properties, leaving one property in an unsatisfactory condition at the close of the year.

The watersheds of Hutchinson and Bennington Runs are uninhabited.

26. Waynsburg Borough, Greene County, is supplied with water by the Waynesburg Water Compeny from Ten Mile Creek. The fourteen unsatisfactory properties on the watershed were reinspected. Eleven pollutions were abated upon five of the unsatisfactory properties, leaving nine properties on the watershed in an unsatisfactory condition at the close of the year.

27. West Chester Borough, Chester County, is supplied with water from Chester Creek. The ninety-four properties on the watershed were inspected and all but twenty were found to be in a satisfactory condition. Tweny-six pollutions were abated upon fifteen of the unsatisfactory properties, leaving five properties in an unsatisfactory condition at the close of the year.

The two hundred and fifteen other boroughs whose water supplies were inspected or reinspected are as follows:—

1. Abbottstown Borough, Adams County, is supplied with water from individual wells and springs.

2. Adamstown Borough, Lancaster County, is supplied with water from individual wells and springs.

3. Akron Borough, Lancaster County, is supplied with water from three drilled wells, one dug well and one spring. The drainage area of the springs is uninhabited.

4. Alburtis Borough, Lehigh County, is supplied with water from individual wells and cisterns.

5. Ashland Borough, Schuylkill County, is supplied with water from Little Mahanoy Creek. Thirty-seven of the properties on the watershed were inspected and all but two were found to be in a satisfactory condition. Four pollutions were abated upon the two unsatisfactory properties, leaving all properties on the watershed in a satisfactory condition at the close of the year.

6. Attleboro Borough, Bucks County, is supplied with water by the Langhorne Spring Water Company from Chub Run. Sixteen of the properties on the watershed were inspected and all but three were found to be in a satisfactory condition. Nine pollutions were abated upon the three unsatisfactory properties, leaving all properties on the watershed in a satisfactory condition at the close of the year.

7. Avis Borough, Clinton County, is supplied with water by the Chatham Water Company from Chatham Run. The one unsatisfactory property on the watershed was reinspected. Three pollutions were abated upon the one unsatisfactory property, leaving all properties on the watershed in a satisfactory condition at the close of the year.

8. Bangor Borough, Northampton County, is supplied with water by the Bangor Water Company from Martins Creek. The eight properties on the watershed were inspected and all but two were found to be in a satisfactory condition. The two unsatisfactory properties remained unchanged at the close of the year.

9. Bath Borough, Northampton County, is supplied with water from Hatch Gravel Creek. The thirteen properties on the watershed were inspected and all but two were found to be in a satisfactory condition. The two unsatisfactory properties remained unchanged at the close of the year.

10. Bear Lake Borough, Warren County, is supplied with water from individual wells.

11. Beaver Falls Borough, Beaver County, is supplied with filtered water by the Beaver Valley Water Company from the Beaver River.

12. Beavertown Borough, Snyder County, is supplied with water from Fall Run. The watershed is uninhabited.

13. Bendersville Borough, Adams County, is supplied with water from springs. The drainage area is uninhabited.

14. Bernville Borough, Berks County, is supplied with water from individual wells, springs and cisterns.

15. Berwick Borough, Columbia County, is supplied with water by the Berwick Water Company from Varners Run and Glen Brook. The forty-six properties on the watersheds were inspected and all but two were found to be in a satisfactory condition. One pollution was abated upon one of the unsatisfactory properties, leaving one property in an unsatisfactory condition at the close of the year.

16. Bethany Boroguh, Wayne County, is supplied with water from individual wells and springs.

17. Bethlehem Borough, Lehigh and Northampton Counties, is supplied with water from artesian wells. It is also supplied with filtered water from the Lehigh River by the Bethlehem City Water Company.

18. Biglerville Borough, Adams County, is supplied with water by the Biglerville Water Company from springs and drilled wells. The drainage area of the springs is uninhabited.

19. Blain Borough, Perry County, is supplied with water from a protected spring.

20. Blossburg Borough, Tioga County, is supplied with water by the Blossburg Water Company from Taylor and Bellman Runs. The watersheds are uninhabited.

21. Boyertown Borough, Berks County, is partially supplied with water from Iron Stone Creek. The one unsatisfactory property on the watershed was reinspected. The one pollution upon the one unsatisfactory property was abated, leaving all properties on the watershed in a satisfactory condition at the close of the year.

22. Burgettstown Borough, Washington County, is supplied with water from individual wells and springs.

23. Canonsburg Borough, Washington County, is supplied with water by the North Strabane Water Company from Little Chartiers Creek. The three unsatisfactory properties on the watershed were reinspected. Four pollutions were abated upon two of the unsatisfactory properties, leaving one property in an unsatisfactory condition at the close of the year.

24. Canton Borough, Bradford County, is supplied with water by the Citizens Water Company from Lake Nephawin and Mill Creek. The twenty properties on Lake Nephawin watershed were inspected and all but one were found to be in a satisfactory condition. The one unsatisfactory property remained unchanged at the close of the year. The twenty properties on the Mill Creek watershed were inspected and all but four were found to be in a satisfactory condition. Four pollutions were abated upon the four unsatisfactory properties, leaving all properties on the watershed in a satisfactory condition at the close of the year.

25. Catasauqua Borough, Lehigh County, is supplied with water by the Clear Springs Water Company from Spring Creek. The forty-two properties on the watershed were inspected and all but twelve were found to be in a satisfactory condition. Sixteen pollutions were abated upon eight of the unsatisfactory properties, leaving four properties in an unsatisfactory condition at the close of the year.

26. Catawissa Borough, Columbia County, is supplied with water in emergency from Sassaman Run by the Catawissa Water Company. The two properties on the watershed were inspected and one was found to be in an unsatisfactory condition, remaining unchanged at the close of the year.

27. Chalfont Borough, Bucks County, is supplied with water from individual wells and cisterns.

28. Cherrytree Borough, Indiana County, is supplied with water by the Cherrytree Water Company from Peg Run. The two unsatisfactory properties on the watershed were reinspected. Two pollutions were abated upon the two unsatisfactory properties, leaving all properties on the watershed in a satisfactory condition at the close of the year. There is an emergency supply to Cherrytree Borough furnished by the Cherrytree Water Company from Cush Cushion Creek. The fifteen unsatisfactory properties on the watershed were reinspected. Thirty pollutions were abated upon thirteen of the unsatisfactory properties, leaving two properties on the watershed in an unsatisfactory condition at the close of the year.

29. Clarendon Borough, Warren County, is supplied with water by the Clarendon Water Company from a drilled well. The Clarendon Water Company also furnishes the Borough with water in emergency from a mountain stream. The watershed is uninhabited.

30. Coatesville Borough, Chester County, is supplied with water from Sucker Run. Seventy of the properties on the watershed were inspected and all but thirty-seven were found to be in a satisfactory condition. Forty-eight pollutions were abated upon twenty of the unsatisfactory properties, leaving seventeen properties in an unsatisfactory condition at the close of the year. On the watershed of Rock Run, a proposed supply to Coatesville Borough, the sixty-nine properties were inspected and all but twenty-one were found to be in a satisfactory condition. Twenty-six pollutions were abated upon fifteen of the unsatisfactory properties, leaving six properties in an unsatisfactory condition at the close of the year.

31. Collegeville Borough, Montgomery County, is supplied with water from individual wells and twenty-five consumers are supplied with water from the Perkiomen Creek by F. J. Clamer.

32. Columbia Borough, Lancaster County, is supplied with filtered water by the Columbia Water Company from the Susquehanna River.

33. Columbus Borough, Warren County, is supplied with water from individual wells.

34. Coopersburg Borough, Lehigh County, is supplied with water from an artesian well and a spring. The drainage area is uninhabited.

35. Coplay Borough, Lehigh County, is supplied with water by the Clear Springs Water Company from Spring Creek; described under Catasauqua Borough supply.

36. Corsica Borough, Jefferson County, is supplied with water from individual wells.

37. Covington Borough, Tioga County, is supplied with water from individual wells and springs.

38. Cresson Borough, Cambria County, is partially supplied with water by the Summit Supply Water Company from Bear Rock Run. The one property on the watershed was inspected and found to be in a satisfactory condition.

39. Curwensville Borough, Clearfield County, is supplied with water by the Curwensville Water Company from Andersons Creek. Thirty-eight of the properties on the watershed were inspected and thirty-seven of them were found to be in an unsatisfactory condition. Forty-four pollutions were abated upon thirty-four of the unsatisfactory properties, leaving three properties in an unsatisfactory condition at the close of the year.

40. Dallastown Borough, York County, is supplied with water in emergency from Mill Creek by the York County Consolidated Water Company. The one hundred and sixty-three properties on the watershed were inspected and all but seven were found to be in a satisfactory condition. Thirteen pollutions were abated upon the seven unsatisfactory properties, leaving all properties on the watershed in a satisfactory condition at the close of the year.

41. Dalton Borough, Lackawanna County, is supplied with water by the North Abington Water Company from two artesian wells.

42. Dauphin Borough, Dauphin County, is supplied with water by the Dauphin Consolidated Water Supply Company from Stony Creek. The five unsatisfactory properties on the watershed were reinspected. Seven pollutions were abated upon the five unsatisfactory properties, leaving all properties in a satisfactory condition at the close of the year.

43. Delaware Water Gap Borough, Monroe County, is supplied with water in emergency by D. D. Drake from Cherry Creek. The five unsatisfactory properties on the watershed were reinspected. Seven pollutions were abated upon four of the unsatisfactory properties, leaving one property in an unsatisfactory condition at the close of the year.

44. Denver Borough, Lancaster County, is supplied with water from thirteen springs. The drainage area is uninhabited.

45. Derry Borough, Westmoreland County, is supplied with water by the Derry Water Company from Ethel Springs and McGee Run. On the drainage area of Ethel Springs the twenty-four properties were inspected and all but one were found to be in a satisfactory condition. The one unsatisfactory property remained unchanged at the close of the year. On the watershed of McGee Run the five properties were inspected and found to be in a satisfactory condition.

46. Dillsburg Borough, York County, is supplied with water by the Dillsburg Water Company from springs. The drainage area is uninhabited.

47. Driftwood Borough, Cameron County, is supplied with water by the Driftwood Water Company from Nanny Run. The watershed is uninhabited.

48. DuBois Borough, Clearfield County, is supplied with water from Anderson Creek. The twelve unsatisfactory properties on the watershed were reinspected. Fifteen pollutions were abated upon the twelve unsatisfactory properties, leaving all properties in a satisfactory condition at the close of the year.

49. East Conemaugh Borough, Cambria County, is supplied with water by the Conemaugh and Franklin Water Company from Clapboard Run. The fifty-seven properties on the watershed were inspected and all but one were found to be in a satisfactory condition. The one unsatisfactory property remained unchanged at the close of the year.

50. East Greenville Borough, Montgomery County, is supplied with water from the Perkiomen Creek. The ten unsatisfactory properties on the watershed were reinspected. Sixteen pollutions were abated upon seven of the unsatisfactory properties, leaving three properties in an unsatisfactory condition at the close of the year.

51. East Stroudsburg Borough, Monroe County, is supplied with water from Sambo Creek. The one unsatisfactory property on the watershed was reinspected. One pollution was abated upon the one unsatisfactory property, leaving all properties on the watershed in a satisfactory condition at the close of the year.

52. East Waynesburg Borough, Greene County, is supplied with water by the Waynesburg Water Company from Ten Mile Creek; described under Waynesburg Borough supply.

53. Elkland Borough, Tioga County, is supplied with water from springs. The drainage area is uninhabited. There is also an emergency supply taken from five wells located in the borough.

54. Emaus Borough, Lehigh County, is partially supplied with water from springs and drilled wells. The drainage area of the springs is uninhabited. Two hundred and twenty-five properties in the borough are supplied with water by the

Mountain Water Company from three springs and two dug wells. The six properties on the drainage area of the springs were inspected and found to be in a satisfactory condition.

55. Ephrata Borough, Lancaster County, is supplied with water from four springs and four drilled wells. The drainage area of the springs is uninhabited.

56. Factoryville Borough, Wyoming County, is supplied with water by the Nokomis Water Company from Lake Sheridan. The four unsatisfactory properties on the watershed were reinspected. Five pollutions were abated upon two of the unsatisfactory properties, leaving two properties in an unsatisfactory condition at the close of the year.

57. Falls Creek Borough, Jefferson County, is supplied with water from Falls Creek. The one unsatisfactory property on the watershed was reinspected. The one pollution upon the one unsatisfactory property was abated, leaving all properties in a satisfactory condition at the close of the year.

58. Fleetwood Borough, Berks County, is supplied with water from a tributary to Maiden Creek. The one unsatisfactory property on the watershed was reinspected. The one pollution on the one unsatisfactory property was abated, leaving all properties in a satisfactory condition at the close of the year.

59. Flemington Borough, Clinton County, is supplied with water by the West End Water Company from Queens Run. The eighteen properties on the watershed were inspected and all but seven were found to be in a satisfactory condition. Twelve pollutions were abated upon six of the unsatisfactory properties, leaving one property in an unsatisfactory condition at the close of the year.

60. Forest City Borough, Susquehanna County, is supplied with water by the Scranton Gas & Water Company from Brace Brook. The one unsatisfactory property on the watershed was reinspected. Two pollutions upon the one unsatisfactory property were abated, leaving all properties on the watershed in a satisfactory condition at the close of the year.

61. Fountain Hill Borough, Lehigh County, is supplied with filtered water by the Bethlehem City Water Company from Lehigh River.

62. Franklin Borough, Cambria County, is supplied with water by the Conemaugh and Franklin Water Company from Clapboard Run; described under East Conemaugh Borough supply.

63. Galeton Borough, Potter County, is supplied with water by the Galeton-Eldred Water Company from mountain streams and four springs. The drainage areas are uninhabited.

64. Gallitzin Borough, Cambria County, is supplied with water in emergency by the Summit Water Supply Company from the Little Conemaugh River. The watershed is uninhabited.

65. Glenburn Borough, Lackawanna County, is supplied with water from individual wells and springs. Twelve properties are supplied by E. L. Hill from a protected spring.

66. Grand Valley Borough, Warren County, is supplied with water from individual wells.

67. Gratz Borough, Dauphin County, is supplied with water from individual wells.

68. Greenville Borough, Mercer County, is supplied with water by the Greenville Water Company from a tributary to Shenango River. The one unsatisfactory property on the watershed was reinspected. Two pollutions were abated upon the one unsatisfactory property, leaving all properties in a satisfactory condition at the close of the year.

69. Halifax Borough, Dauphin County, is supplied with water by the Halifax Water Company in emergency from Etzweiler Run. The one unsatisfactory property on the watershed was reinspected. The one pollution upon the one unsatisfactory property was abated, leaving all properties in a satisfactory condition at the close of the year.

70. Hallstead Borough, Susquehanna County, is supplied with water by the Hallstead Water Company from DuBois Creek. The two unsatisfactory properties on the watershed were reinspected. One pollution was abated upon one of the unsatisfactory properties, leaving one property on the watershed in an unsatisfactory condition at the close of the year.

71. Hanover Borough, York County, is supplied with water by the Hanover and McSherrystown Water Company from Little Conewago Creek. The six unsatisfactory properties on the watershed were reinspected. Sixteen pollutions were abated upon the six unsatisfactory properties, leaving all properties in a satisfactory condition at the close of the year.

72. Hawley Borough, Wayne County, is supplied with water by the Hawley Water Company from springs. The drainage area is uninhabited.

73. Haysville Borough, Allegheny County, is supplied with water by the Haysville Water Company from Haysville Run. One property on the watershed was inspected and found to be in a satisfactory condition.

74. Hooversville Borough, Somerset County, is supplied with water by the Hooversville Water Company from Fallen Timber Run. The two unsatisfactory properties on the watershed were reinspected. Four pollutions were abated upon the two unsatisfactory properties, leaving all properties in a satisfactory condition at the close of the year.

75. Hughesville Borough, Lycoming County, is supplied with water by the Hughesville Home Water Company from five drilled wells.

76. Hulmeville Borough, Bucks County, is supplied with water from individual wells.

77. Hummelstown Borough, Dauphin County, is supplied with water by the Hummelstown Consolidated Water Company from Swatara Creek. The thirteen unsatisfactory properties on the watershed were reinspected. Seven pollutions were abated upon five of the unsatisfactory properties, leaving eight properties on the watershed in an unsatisfactory condition at the close of the year.

78. Ivyland Borough, Bucks County, is supplied with water from individual wells.

79. Jefferson Borough, York County, is supplied with water from individual wells.

80. Jenkintown Borough, Montgomery County, is partially supplied with water by the Moreland Spring Water Company from Pennypack Creek. Four hundred and eighty-four of the properties on the watershed were inspected and all but one hundred and twelve were found to be in a satisfactory condition. Ninety pollutions were abated upon seventy-four of the unsatisfactory properties, leaving thirty-eight properties in an unsatisfactory condition at the close of the year.

81. Johnsonburg Borough, Elk County, is partially supplied with water by the Johnsonburg Water Company from Powers Run. The two unsatisfactory properties on the watershed were reinspected. One pollution was abated upon one of the unsatisfactory properties, leaving one property in an unsatisfactory condition at the close of the year.

82. Knoxville Borough, Tioga County, is supplied with water from drilled wells and springs. The drainage area is uninhabited.

83. Landisburg Borough, Perry County, is supplied with water from individual wells and springs.

84. Langhorne Borough, Bucks County, is supplied with water by the Langhorne Spring Water Company from Chubb Run; described under Attleboro Borough supply.

85. Langhorne Manor Borough, Bucks County, is supplied with water by the Langhorne Spring Water Company from Chubb Run; described under Attleboro Borough supply.

86. Lanesboro Borough, Susquehanna County, is supplied with water by the Canawacta Water Supply Company from Canawacta Creek. The four unsatisfactory properties on the watershed were reinspected. Four pollutions were abated upon three of the unsatisfactory properties, leaving one property in an unsatisfactory condition at the close of the year.

87. Laplume Borough, Lackawanna County, is supplied with water from individual wells and springs.

88. Latrobe Borough, Westmoreland County, is supplied with water by the Latrobe Water Company from Loyalhanna Creek. The four unsatisfactory properties on the water shed were reinspected. One pollution was abated upon one of the unsatisfactory properties, leaving three properties in an unsatisfactory condition at the close of the year.

89. Lawrenceville Borough, Tioga County, is supplied with water from individual wells and springs.

90. Lenhartsville Borough, Berks County, is supplied with water from individual wells.

91. Lewisberry Borough, York County, is supplied with water from individual wells and cisterns.

92. Lewisville Borough, Potter County, is supplied with water by the Lewisville Water Company from springs. The drainage area is uninhabited.

93. Ligonier Borough, Westmoreland County, is supplied with water from Furnace Run. The four properties on the watershed were inspected and all but two were found to be in a satisfactory condition. Three pollutions were abated upon the two unsatisfactory properties, leaving all properties on the watershed in a satisfactory condition at the close of the year.

94. Lilly Borough, Cambria County, is supplied with water by the Summit Water Supply Company from Bear Rock Run. The ten properties on the watershed were inspected and all but one were found to be in a satisfactory condition. The one unsatisfactory property remained unchanged at the close of the year.

95. Lititz Borough, Lancaster County, is supplied with water from a dug well.

96. Liverpool Borough, Perry County, is supplied with water from individual wells and springs.

97. Loganton Borough, Clinton County, is supplied with water from springs. The drainage area of the springs is uninhabited.

98. Loganville Borough, York County, is supplied with water from individual wells.

99. McAdoo Borough, Schuylkill County, is supplied with water by the Honey Brook Water Company, from one spring and drilled well.

100. McDonald Borough, Washington County, is supplied with water by the Citizens Water Company of McDonald from Raccoon Creek. The one unsatisfactory property on the watersheed was reinspected. Three pollutions were abated upon the one unsatisfactory property, leaving all properties on the watershed in a satisfactory condition at the close of the year.

101. McEwensville Borough, Northumberland County, is supplied with water from individual wells and springs.

102. McSherrystown Borough, Adams County, is supplied with water by the Hanover and McSherrystown Water Company from Little Conewago Creek; described under Hanover Borough supply.

103. Macungie Borough, Lehigh County, is supplied with water from eight springs. The drainage area is uninhabited. There is an emergency supply taken from a spring creek. The watershed in uninhabited.

104. Mahanoy City Borough, Schuykill County, is supplied with water by the Mahanoy City Water Company from Mahanoy Creek. The eight properties on the watershed were inspected and all but one were found to be in a satisfactory condition. One pollution was abated upon the one unsatisfactory property, leaving all properties in a satisfactory condition at the close of the year.

105. Mansfield Borough, Tioga County, is supplied with water by the Mansfield Water Company in emergency from Lambs Creek. The six unsatisfactory properties on the watershed were reinspected. Nine pollutions were abated upon the six unsatisfactory properties, leaving all properties in a satisfactory condition at the close of the year.

106. Marcus Hook Borough, Delaware County, is supplied with filtered water by the New Chester Water Company from the Delaware River.

107. Marietta Borough, Lancaster County, is supplied with water by the Marietta Gravity Water Company from Dugans and Wild Cat Runs. There is one satisfactory property located on each watershed.

108. Marion Heights Borough, Northunberland County, is supplied with water by the Bear Gap Water Company from the South Branch of Roaring Creek. The fifty properties on the watershed were inspected and all but one were found to be in a satisfactory condition. One pollution was abated upon the one unsatisfactory property, leaving all properties in a satisfactory condition at the close of the year.

109. Marysville Borough, Perry County, is partially supplied with water by the Marysville Water Company from Sitterly Run. The watershed is uninhabited.

110. Matamoras Borough, Pike County, is supplied with water by the Matamoras Citizens Water Company from drilled wells.

111. Meyersdale Borough, Somerset County, is supplied with water by the Sand Spring Water Company of Meyersdale, from Stamm Run, Blue Lick Creek and Sand Spring. The drainage area of Sand Spring is uninhabited. The four unsatisfactory properties on the watersheds of Stamm Run and Blue Lick Creek were reinspected. Five pollutions were abated upon three of the unsatisfactory properties, leaving one property on the watersheds in an unsatisfactory condition at the close of the year.

112. Middletown Borough, Dauphin County, is partially supplied with water by the Middletown and Swatara Consolidated Water Company from Swatara Creek. The thirteen unsatisfactory properties on the watershed were reinspected. Seven pollutions were abated upon five of the unsatisfactory properties, leaving eight properties in an unsatisfactory condition at the close of the year.

113. Mifflinburg Borough, Union County, is supplied with water from the North Branch of Buffalo Creek. The seven camps on the watershed were inspected, and all but one were found to be in a satisfactory condition. The one unsatisfactory camp remained unchanged at the close of the year.

114. Millerstown Borough, Perry County, is supplied with water from springs and Potash Run. The drainage area of the springs and the watershed of Potash Run are uninhabited.

115. Mill Hall Borough, Clinton County, is supplied with water by the West End Water Company from Queens Run; described under Flemington Borough supply.

116. Millheim Borough, Centre County, is supplied with water by the Millheim Water Company from Philips Creek. The watershed is uninhabited.

117. Milton Borough, Northumberland County, is supplied with water by the White Deer Mountain Water Company from the White Deer Creek; described under Lewisburg Borough supply.

118. Mont Alto Borough, Franklin County, is supplied with water from individual wells and springs. About seventy-five properties are supplied with water by J. J. Plank from a well.

119. Montgomery Borough, Lycoming County, is supplied with water by the Montgomery Water Company from Black Hole Creek. The six unsatisfactory properties on the watershed were reinspected. Fourteen pollutions were abated upon the six unsatisfactory properties, leaving all properties in a satisfactory condition at the close of the year.

120. Mt. Carmel Borough, Northumberland County, is supplied with water by the Bear Gap Water Company in emergency from the South Branch of Roaring Creek; described under Marion Heights Borough supply.

121. Mt. Holly Springs Borough, Cumberland County, is supplied with water by the Mt. Holly Water Company from Spruce Creek, Muddy and Cold Spring Runs. The watersheds are uninhabited.

122. Mt. Jewett Borough, McKean County, is supplied with water from the Mt. Jewett Water Company from springs. The drainage area is uninhabited.

123. Mt. Joy Borough, Lancaster County, is suppled with water from the Little Chiquesalunga Creek. Two of the properties on the watershed were inspected and found to be in an unsatisfactory condition. The two unsatisfactory properties remained unchanged at the close of the year.

124. Mt. Penn Borough, Berks County, is supplied with water by the Mt. Penn Suburban Water Company from Antietam Creek. The seven properties on the watershed were inspected and all but three were found to be in a satisfactory condition. The three unsatisfactory properties remained unchanged at the close of the year.

125. Mt. Pleasant Borough, Westmoreland County, is supplied with water by the Mt. Pleasant Water Company from Jacobs Creek. The four hundred and seventy-six properties on the watershed were inspected and all but two hundred and seventy-four were found to be in a satisfactory condition. Twenty pollutions were abated upon fifteen of the unsatisfactory properties, leaving two hundred and fifty-nine properties in an unsatisfactory condition at the close of the year.

126. Mt. Union Borough, Huntingdon County, is supplied with water by the Mt. Union Water Company, from Furnace and Singers Gap Runs. The watersheds are uninhabited.

127. Mountville Borough, Lancaster County, is supplied with water from four springs. The drainage area is uninhabited.

128. Muncy Borough, Lycoming County, is supplied with water by the Muncy Water Supply Company from Glade Run. Two of the properties on the watershed were inspected and found to be in an unsatisfactory condition. One pollution was abated upon one of the unsatisfactory properties, leaving two properties on the watershed in an unsatisfactory condition at the close of the year.

129. Narberth Borough, Montgomery County, is supplied with water by the Springfield Consolidated Water Company from Crum and Pickering Creek; described under Philadelphia Suburbs supply.

130. Nazareth Borough, Northampton County, is supplied with water by the Blue Mountain Consolidated Water Company from Ross Common Creek. The fourteen properties on the watershed were inspected and all but two were found to be in a satisfactory condition. The two unsatisfactory properties remain unchanged at the close of the year.

131. Nescopeck Borough, Luzerne County, is supplied with water by the Berwick Water Company from Varners Run and Glen Brook; described under Berwick Borough supply.

132. New Bethlehem Borough, Clarion County, is supplied with water by the Citizens Water Company of New Bethlehem from Red Bank Creek. The five unsatisfactory properties on the watershed were reinspected. Eight pollutions were abated upon four of the unsatisfactory properties, leaving two properties in an unsatisfactory condition at the close of the year.

133. New Brighton Borough, Beaver County, is supplied with filtered water by the Beaver Valley Water Company from Beaver River.

134. New Buffalo Borough, Perry County, is supplied with water from individual wells.

135. New Columbus Borough, Luzerne County, is supplied with water from individual wells and springs.

136. New Freedom Borough, York County, is supplied with water from an artesian well.

137. New Haven Borough, Fayette County, is supplied with water by the Connellsville Water Company from the Youghiogheny River and McCoy Run; described under Connellsville City supply.

138. New Holland Borough, Lancaster County, is supplied with water by the New Holland Water Company from two springs. The two properties on the drainage area were inspected and found to be in a satisfactory condition.

139. New Paris Borough, Bedford County, is supplied with water from individual wells.

140. Newry Borough, Blair County, is supplied with water from individual wells.

141. New Salem Borough, York County, is supplied with water from individual wells.

142. Newtown Borough, Bucks County, is supplied with water by the Newtown Artesian Water Company from five drilled wells.

143. Nicholson Borough, Wyoming County, is supplied with water by the Nicholson Water Company from Hortons Creek. The three unsatisfactory properties on the watershed were reinspected. Two pollutions were abated upon one of the unsatisfactory properties, leaving two properties in an unsatisfactory condition at the close of the year.

144. Northampton Heights Borough, Northampton County, is supplied with filtered water by the Bethlehem City Water Company from the Lehigh River.

145. Oseeola Borough, Tioga County, is supplied with water from individual wells and springs.

146. Patton Borough, Cambria County, is supplied with water by the Patton Water Company from Chest Creek. The three unsatisfactory properties on the watershed were reinspected. Five pollutions were abated upon two of the unsatisfactory properties, leaving two properties in an unsatisfactory condition at the close of the year.

147. Pen Argyl Borough, Northampton County, is supplied with water by the Blue Mountain Consolidated Water Company from Ross Common Creek; described under Nazareth Borough supply.

148. Perkasie Borough, Bucks County, is supplied with water by the Perkasie Water Supply Company from two springs and one drilled well. The drainage area of the springs is uninhabited

149. Pleasantville Borough, Bedford County, is supplied with water from individual wells and springs.

150. Port Allegany Borough, McKean County, is supplied with water by the Port Allegany Water Company from Skinners Creek. The one camp on the watershed was inspected. Three pollutions were abated at the one camp, leaving the watershed in a satisfactory condition at the close of the year.

151. Pottstown Borough, Montgomery County, is supplied with filtered water by the Pottstown Gas and Water Company from the Schuylkill River.

152. Prompton Borough, Wayne County, is supplied with water from individual wells and springs.

153. Quakertown Borough, Bucks County, is supplied with water by the Quakertown Water Company from Tohickon Creek. Four unsatisfactory properties on the watershed were inspected. Two pollutions were abated upon one of the unsatisfactory properties, leaving three properties on the watershed in an unsatisfactory condition at the close of the year.

154. Railroad Borough, York County, is supplieed with water from individual wells. Fifty properties are supplied with water from two large springs owned by Edward Helb. The drainage area is uninhabited.

155. Renovo Borough, Clinton County, is supplied with water from Drury Run. The fifteen properties on the watershed were inspected and found to be in a satisfactory condition. There is also an emergency supply furnished by the Pennsylvania Railroad Company from Paddy Run. The ten properties on the watershed were inspected and found to be in a satisfactory condition.

156. Reynoldsville Borough, Jefferson County, is supplied with water by the Reynoldsville Water Company from six drilled wells and Pitch Pine Run. The four properties on the watershed were inspected and found to be in a satisfactory condition.

157. Richland Borough, Lebanon County, is supplied with water by the Richland Water Company from a spring. The drainage area is uninhabited.

158. Riverside Borough, Northumberland County, is supplied with water from individual wells.

159. Robesonia Borough, Berks County, is supplied with water by the Womelsdorf Consolidated Water Company from Gold Stream. The two unsatisfactory properties on the watershed were reinspected. Five pollutions were abated upon two of the unsatisfactory properties, leaving all properties on the watershed in a satisfactory condition at the close of the year.

160. Rockledge Borough, Montgomery County, is supplied with water by the Springfield Consolidated Water Company from Neshaminy Creek; described under Philadelphia Suburbs supply.

161. Roseville Borough, Tioga County, is supplied with water from individual wells and springs.

162. Royalton Borough, Dauphin County, is partially supplied with water by the Middletown and Swatara Consolidated Water Company from Swatara Creek; described under Middletown Borough supply.

163. St. Marys Borough, Elk County, is supplied with water by the St. Marys Water Company from Laurel Run, Silver and Wolf Lick Creeks. The sixteen properties on the watersheds were inspected and found to be in a satisfactory condition.

164. Sandy Lake Borough, Mercer County, is supplied with water by the Sandy Lake Water Works Company from Spring Run and springs. The one property on the watershed of Spring Run was inspected and found to be in an unsatisfactory condition. Four pollutions were abated upon the one unsatisfactory property, leaving it in a satisfactory condition at the close of the year. The drainage area of the springs is uninhabited.

165. Scalp Level Borough, Cambria County, is supplied with water by the Richland Township Water Company from Little Paint Creek. The ten unsatisfactory properties on the watershed were reinspected. Eleven pollutions were abated upon nine of the unsatisfactory properties, leaving one property on the watershed in an unsatisfactory condition at the close of the year.

166. Scottdale Borough, Westmoreland County, is supplied with water by the Citizens Water Company of Scottdale from Green Lick Creek, Spruce and Mounts Runs, and by the Mountain Water Supply Company from Indian Creek. The eleven properties on the watershed of Green Lick Creek were inspected and all but one were found to be in a satisfactory condition. The one unsatisfactory property remained unchanged at the close of the year. The thirty-six properties on the watershed of Spruce Run were inspected and found to be in a satisfactory condition. The five properties on the watershed of Mounts Run were inspected and all but one were found to be in a satisfactory condition. One pollution was abated upon the one unsatisfactory property, leaving all properties on the watershed in a satisfactory condition at the close of the year. Forty-four of the properties on the Indian Creek watershed were inspected and all but nineteen were found to be

in a satisfactory condition. Nineteen pollutions were abated upon thirteen of the unsatisfactory properties, leaving six properties in an unsatisfactory condition at the close of the year.

167. Selinsgrove Borough, Snyder County, is supplied with water by the Selinsgrove Water Company from Penns Creek. The six unsatisfactory properties on the watershed were reinspected. Ten pollutions were abated upon four of the unsatisfactory properties, leaving two properties in an unsatisfactory condition at the close of the year.

168. Seven Valleys Borough, York County, is supplied with water from individual wells.

169. Shamokin Borough, Northumberland County, is supplied with water by the Roaring Creek Water Company from the South Branch of Roaring Creek and Trout Run. The forty-two properties on the watershed of the South Branch of Roaring Creek were inspected and found to be in a satisfactory condition. The four properties on the watershed of Trout Run were inspected and found to be in a satisfactory condition.

170. Shickshinny Borough, Luzerne County, is supplied with water by the Shickshinny Water Company from Valley Creek. The eight properties on the watershed were inspected and all but two were found to be in a satisfactory condition. The two unsatisfactory properties remained unchanged at the close of the year.

171. Shinglehouse Borough, Potter County, is supplied with water by the Shinglehouse Water Company from eight springs and four drilled wells. The drainage area of the springs is uninhabited.

172. Slatington Borough, Lehigh County, is supplied with water from mountain springs. The drainage area is uninhabited.

173. Smithton Borough, Westmoreland County, is supplied with water from individual wells and springs. Mr. Irwin Smith supplies twenty properties from two drilled wells. Mr. Herman Raithel supplies six properties from a drilled well. Mr. Jose Bobe supplies three properties from a drilled well and the Smithton Brewery supplies one property from a drilled well.

174. Snydertown Borough, Northumberland County, is supplied with water from individual wells and springs.

175. South Allentown Borough, Lehigh County, is supplied with water from two artesian wells.

176. South Bethlehem Borough, Northampton County, is supplied with filtered water by the Bethlehem City Water Company from the Lehigh River.

177. South Canonsburg Borough, Washington County, is supplied with water by the North Strabane Water Company from Little Chartiers Creek; described under Canonsburg Borough supply.

178. South Fork Borough, Cambria County, is supplied with water by the South Fork Water Company from Sandy Run. Eleven of the properties on the watershed were inspected and ten were found to be in an unsatisfactory condition. Eleven pollutions were abated upon seven of the unsatisfactory properties, leaving five properties in an unsatisfactory condition at the close of the year.

179. South Renovo Borough, Clinton County, is supplied with water from Halls Run. The watershed in uninhabited.

180. South Williamsport Borough, Lycoming County, is supplied with water by the Williamsport Water Company from Hagerman Run and Mosquito Creek. The twenty properties on the watershed of Mosquito Creek were inspected and found to be in a satisfactory condition. The watershed of Hagerman Run is uninhabited.

181. Starrucca Borough, Wayne County, is supplied with water from individual wells and springs.

182. Stoneboro Borough, Mercer County, is supplied with water from seven springs. The drainage area of the springs is uninhabited.

183. Strasburg Borough, Lancaster County, is supplied with water from springs. The drainage area of the springs is uninhabited.

184. Sugar Grove Borough, Warren County, is supplied with water from individual wells.

185. Summerville Borough, Jefferson County, is supplied with water by the Peoples Water Company of Summerville from a spring and a drilled well. The drainage area of the spring is uninhabited.

186. Summit Hill Borough, Carbon County, is supplied with water by the Summit Hill Water Company from a spring and an artesian well. The one unsatisfactory property on the drainage area of the spring was inspected and remained unchanged at the close of the year. The Summit Hill Water Company furnishes water in emergency from Mauch Chunk Creek. The four properties on the watershed were inspected and found to be in an unsatisfactory condition, remaining unchanged at the close of the year.

187. Susquehanna Borough, Susquehanna County, is supplied with water by the Canawacta Water Supply Company from Canawacta Creek; described under Lanesboro Borough supply.

188. Sykesville Borough, Jefferson County, is supplied with water from two drilled wells.

189. Terre Hill Borough, Lancaster County, is supplied with water from individual wells.

190. Thompson Borough, Susquehanna County, is supplied with water by the Thompson Borough Water Company from two springs and drilled wells. The drainage area of the springs is uninhabited.

191. Tidioute Borough, Warren County, is supplied with water by the Tidioute Water Company from springs and the Tidioute Creek. The watershed of Tidioute Creek is uninhabited and the drainage area of the springs is uninhabited.

192. Tioga Borough, Tioga County, is supplied with water by the Tioga Water Works Company from Mountain Brook. The one unsatisfactory property on the watershed was inspected. Three pollutions upon the one unsatisfactory property were abated, leaving all properties in a satisfactory condition at the close of the year.

193. Tower City Borough, Schuylkill County, is supplied with water by the Citizens Water Company of Tower City from Wiconisco Creek. The five unsatisfactory properties on the watershed were reinspected. Eight pollutions were abated upon three of the unsatisfactory properties, leaving three properties on the watershed in an unsatisfactory condition at the close of the year.

194. Troy Borough, Bradford County, is partially supplied with water from the West Branch of Sugar Creek. One of the properties on the watershed was inspected and found to be in an unsatisfactory condition. The one unsatisfactory property remained unchanged at the close of the year.

195. Tunnelhill Borough, Cambria County, is supplied with water in emergency by the Summit Water Supply Company from the Little Conemaugh River. The watershed is uninhabited.

196. Uniondale Borough, Susquehanna County, is supplied with water from individual wells and springs.

197. Upland Borough, Delaware County, is supplied with filtered water by the New Chester Water Company from the Delaware River.

198. Walnutport Borough, Northampton County, is supplied with water by the Blue Mountain Consolidated Water Company from Ross Common Creek; described under Nazareth Borough supply.

199. Washington Borough, Lancaster County, is supplied with water from individual wells.

200. Washingtonville Borough, Montour County, is supplied with water from individual wells and springs.

201. Watsontown Borough, Northumberland County, is supplied with water by the White Deer Mountain Water Company from White Deer Creek; described under Lewisburg Borough supply.

202. Waverly Borough, Lackawanna County, is supplied with water from individual wells and springs.

203. Waymart Borough, Wayne County, is supplied with water by the Waymart Water Company from a spring. The drainage area is uninhabited. The Waymart Water Company also furnishes water in emergency from Van Auken Creek. The thirty-six properties on the watershed were inspected and all but six were found to be in a satisfactory condition. Nine pollutions were abated upon four of the unsatisfactory properties, leaving two properties in an unsatisfactory condition at the close of the year.

204. Waynesboro Borough, Franklin County, is partially supplied with water by the Waynesboro Water Company from Little Antietam Creek. The forty-five properties on the watershed were inspected and found to be in a satisfactory condition.

205. West Alexander Borough, Washington County, is supplied with water from individual wells.

206. West Berwick Borough, Columbia County, is supplied with water by the Berwick Water Company from Varners Run and Glen Brook; described under Berwick Borough supply.

207. Westfield Borough, Tioga County, is supplied with water from two springs. The drainage area is uninhabited.

208. Windber Borough, Somerset County, is supplied with water by the Windber Water and Power Company from Clear Shade Creek. Four of the properties on the watershed were inspected and found to be in an unsatisfactory condition. One pollution was abated upon one of the unsatisfactory properties, leaving three properties in an unsatisfactory condition at the close of the year. The Windber Water and Power Company also supplies water to the Borough in emergency from Little Paint Creek. The ten unsatisfactory properties on the watershed were reinspected. Eleven pollutions were abated upon nine of the unsatisfactory properties, leaving one property in an unsatisfactory condition at the close of the year.

209. Wind Gap Borough, Northampton County, is supplied with water by the Blue Mountain Consolidated Water Company from Ross Common Creek; described under Nazareth Borough supply.

210. Winterstown Borough, York County, is supplied with water from individual wells.

211. Womeldorf Borough, Berks County, is supplied with water by the Womelsdorf Consolidated Water Company from Gold Stream; described under Robesonia Borough supply.

212. Worthington Borough, Armstrong County, is supplied with water from individual wells. The Worthington Pure Water Company supplies fourteen properties from one drilled well.

213. Worthville Borough, Jefferson County, is supplied with water from individual wells and springs.
214. York Springs Borough, Adams County, is supplied with water from individual wells and springs.
215. Youngsville Borough, Warren County, is supplied with water from individual wells.

The sixty villages whose watersheds were inspected or reinspected are as follows:

1. Allison Village No. 1, Redstone Township, Fayette County, is supplied with water by W. J. Rainey from fifteen drilled wells.
2. Allison Village No. 2, Luzerne Township, Fayette County, is supplied with water by W. J. Rainey from fifteen drilled wells.
3. Audenried Village, Banks Township, Carbon County, is supplied with water by the Honey Brook Water Company from springs and drilled wells. The drainage area of the springs is uninhabited.
4. Beaver Brook Village, Hazel Township, Luzerne County, is supplied with water by the Honey Brook Water Company from springs and drilled wells. The drainage area of the springs is uninhabited.
5. Beaverdale Village, Summerhill Township, Cambria County, is supplied with water by the Summit Water Supply Company from Little Beaver Dam Run. The four properties on the watershed were inspected and found to be in a satisfactory condition.
6. Black Bear Village, Exeter Township, Berks County, is supplied with water by the Mt. Penn Suburban Water Company from Antietam Creek; described under Mt. Penn Borough supply.
7. Blue Ridge Summit Village, Washington Township, Franklin County, is supplied with water by the Blue Ridge Water Supply Company from a drilled well.
8. Boswell Village, Jenner Township, Somerset County, is supplied with water by the Jenner Water Company from three drilled wells.
9. Boyer Heights Village, Cumru Township, Berks County, is supplied with water by the Angelica Water Company from Angelica Creek. The eight unsatisfactory properties on the watershed were reinspected. Twelve pollutions were abated upon six of the unsatisfactory properties, leaving two properties in an unsatisfactory condition at the close of the year.
10. Brier Hill Village, Redstone Township, Fayette County, is supplied with water by the Brier Hill Coke Company from twenty-two drilled wells and four springs.
11. Brookside Village, Cumru Township, Berks County, is supplied with water by the Angelica Water Company from Angelica Creek; described under Boyer Heights Village supply.
12. Crabtree Village, Unity Township, Westmoreland County, is supplied with water by the Jamison Coal and Coke Company from Little Crabtree Creek. The three unsatisfactory properties on the watershed were reinspected. Ten pollutions were abated upon the three unsatisfactory properties, leaving all properties in a satisfacory condition at the close of the year.
13. East Lewisburg Village, West Chilliquaque Township, Northumberland County, is supplied with water by the White Deer Water Company from White Deer Creek; described under Lewisburg Borough supply.
14. Eckley Park Village, Bristol Township, Bucks County, is supplied with water by N. C. Lane from springs. The drainage area of the springs is uninhabited.
15. Fairbanks Village, Redstone Township, Fayette County, is supplied with water by the General Water Company from six drilled wells and the Monongahela River. Water for industrial purposes is obtained from two reservoirs on Dunlap Creek. The two water works systems are interchangeable. The two properties on the watershed of Dunlap Creek were inspected and one of them was found to be in an unsatisfactory condition, remaining unchanged at the close of the year.
16. Fayetteville Village, Greene Township, Franklin County, is supplied with water by the Fayetteville Water Company from Cold Spring Hollow Run. The one property on the watershed was inspected and found to be in a satisfactory condition.
17. Forbes Road Village, Hempfield Township, Westmoreland County, is supplied with water by the Jamison Coal and Coke Company from Little Crabtree Run; reported under Crabtree Village supply.
18. Fort Louden Village, Peters Township, Franklin County, is supplied with water from a spring. The drainage area is uninhabited. The water works system is owned by the consumers.
19. Greenbur Village, Logan Township, Clinton County, is supplied with water by the Greenbur Water Company from Fishing Creek. The one property on the watershed was inspected and found to be in a satisfactory condition.
20. Hannastown Village, Hempfield Township, Westmoreland County, is supplied with water by the Jamison Coal and Coke Company from Little Crabtree Run; described under Crabtree Village supply.

21. Headley Manor Village, Bristol Township, Bucks County, is supplied with water by N. C. Lane from springs. The drainage area is uninhabited.

22. Hershey Village, Derry Township, Dauphin County, is supplied with water by the Hershey Water Company from Manada Creek. Four of the properties on the watershed were inspected and found to be in an unsatisfactory condition. Three pollutions were abated upon one of the unsatisfactory properties, leaving three properties in an unsatisfactory condition at the close of the year.

23. Honey Brook Village, Pine Township, Schuylkill County, is supplied with water by the Honey Brook Water Company from springs and drilled wells. The drainage area of the springs is uninhabited.

24. Hopwood Village, North Union Township, Fayette County, is supplied with water by the Uniontown Water Company from Shutes, Bennington and Hutchinson Runs; described under Uniontown Borough supply.

25. Hyde Park Village, Muhlenberg Township, Berks County, is supplied with water by the Reading Suburban Water Company from Frush Valley Creek. The one unsatisfactory property on the watershed was reinspected and one pollution was abated upon the one unsatisfactory property, leaving all properties on the watershed in a satisfactory condition at the close of the year.

26. Linwood Village, Lower Chichester Township, Delaware County, is supplied with filtered water by the New Chester Water Company from the Delaware River.

27. Lockport Village, Woodward Township, Clinton County, is supplied with water by the West End Water Company from Queens Run; described under Flemington Borough supply.

28. Luxor Village, Hempfield Township, Westmoreland County, is supplied with water by the Jamison Coal and Coke Company from Little Crabtree Run; described under Crabtree Village supply.

29. Millmont Village, Cumru Township, Berks Township, is supplied with water by the Angelica Water Company from Angelica Creek; described under Boyer Heights Village supply.

30. Mocanaqua Village, Conyngham Township, Luzerne County, is supplied with water by the Shickshinny Water Company from Valley Creek; described under Shickshinny Borough supply.

31. Monterey Village, Washington Township, Franklin County, is supplied with water by the Monterey Water Company from drilled wells.

32. Morgantown Village, Caernarvon Township, Berks County, is supplied with water by the Morgantown Water Company from a spring. The drainage area of the spring is uninhabited.

33. New Columbia Village, White Deer Township, Union County, is supplied with water by the White Deer Water Company from White Deer Creek; described under Lewisburg Borough supply.

34. North Berwick Village, Briar Creek Township, Columbia County, is supplied with water by the Berwick Water Company from Varners Run and Glen Brook; described under Berwick Borough supply.

35. Oakbrook Village, Cumru Township, Berks County, is supplied with water by the Angelica Water Company from Angelica Creek; described under Boyer Heights Village supply.

36. Oakland Village, Cumru Township, Berks County, is supplied with water by the Angelica Water Company from Angelica Creek; described under Boyer Heights supply.

37. Oneida Village, East Union Township, Schuylkill County, is supplied with water by the Wyoming Valley Water Supply Company from artesian wells.

38. Orient Village, Redstone Township, Fayette County, is supplied with water by the General Water Company from the Monongahela River. The Orient Coke Company supplies water to Orient Village for industrial purposes from Dunlap Creek. The one satisfactory property on the watershed was inspected. The above-mentioned water works systems are interchangeable.

39. Pen Mar Village, Washington Township, Franklin County, is supplied with water by the Myers Water Company from a spring. The drainage area of the spring is uninhabited.

40. Rauchtown Village, Crawford Township, Clinton County, is supplied with water from Rauch Creek. Fourteen of the properties on the watershed were inspected and found to be in a satisfactory condition. The residents of Rauchtown Village obtain water from Rauch Creek by dipping.

41. Reedsville Village, Brown Township, Mifflin County, is supplied with water by the Lewistown-Reedsville Water Company from Treaster, Coopers Gap and Laurel Run; described under Lewistown Borough supply.

42. Republic Village, Redstone Township, Fayette County, is supplied with water by the Republic Iron and Steel Company from fourteen drilled wells.

43. Ritterville Village, Hanover Township, Lehigh County, is supplied with filtered water by the Bethlehem City Water Company from the Lehigh River.

44. Rouzerville Village, Washington Township, Franklin County, is supplied with water by the Rouzerville Water Company from springs. The drainage area of the springs is uninhabited.

45. Royal Village, Redstone Township, Fayette County, is supplied with water by the General Water Company from the Monongahela River. Thirty-one properties are supplied with water by W. J. Rainey from rings in shaft.

46. Shavertown Village, Kingston Township, Luzerne County, is supplied with water by Mr. Elmer Tottan from three drilled wells.
47. Smithfield Village, Smithfield Township, Huntingdon County, is supplied with water by the Huntingdon Water Supply Company from Standing Stone Creek; described under Huntingdon Borough supply.
48. Stony Creek Mills Village, Lower Alsace Township, Berks County, is supplied with water by the Mt. Penn Suburban Water Company from Antietam Creek; described under Mt. Penn Borough supply.
49. Thompson Village No. 1, Redstone Township, Fayette County, is supplied with water by the General Water Company from the Monongahela River.
50. Thompson Village No. 2, Luzerne Township, Fayette County, is supplied with water by the General Water Company from the Monongahela River.
51. Tower Hill Village No. 1, Redstone Township, Fayette County, is supplied with water by the General Water Company from the Monongahela River.
52. Tower Hill Village No. 2, Luzerne Township, Fayette County, is supplied with water by the General Water Company from the Monongahela River.
53. Trainer Village, Lower Chichester Township, Delaware County, is supplied with filtered water by the New Chester Water Company from the Delaware River.
54. Trucksville Village, Kingston Township, Luzerne County, is supplied with water by Anderson and Hazeltine, Mr. Archie Wolbert and the James Coal Company from drilled wells.
55. Wehrum Village, Buffington Township, Indiana County, is supplied with water by the East Wheatfield and Buffington Water Companies from Rummels Run. The two unsatisfactory properties on the watershed were reinspected. Three pollutions were abated upon the two unsatisfactory properties, leaving all properties on the watershed in a satisfactory condition at the close of the year.
56. West Lewisburg Village, East Buffalo Township, Union County, is supplied with water by the White Deer Mountain Water Company from White Deer Creek; described under Lewisburg Borough supply.
57. West Milton Village, Kelly Township, Union County, is supplied with water by the White Deer Mountain Water Company from White Deer Creek; described under Lewisburg Borough supply.
58. West Waynesburg Village, Franklin Township, Greene County, is supplied with water by the Waynesburg Water Company from Ten Mile Creek; described under Waynesburg Borough supply.
59. White Deer Village, White Deer Township, Union County, is supplied with water by the White Deer Mountain Water Company from White Deer Creek; described under Lewisburg Borough supply.
60. Woolrich Village, Pine Creek Township, Clinton County, is supplied with water by the Chatham Water Company from Chatham Run; described under Avis Borough supply.

The seventeen township whose water supplies were inspected or reinspected are as follows:

1. Allegheny Township, Blair County, is partially supplied with water by the Allegheny Water Company from Mill Run. The thirty-two properties on the watershed were inspected and all but nine were found to be in a satisfactory condition. Six pollutions were abated upon five of the unsatisfactory properties, leaving four properties in an unsatisfactory condition at the close of the year.
2. Allison Township, Clinton County, is partially supplied with water by the West End Water Company from Queens Run; described under Flemington Borough supply.
3. Cecil Township, Washington County, is partially supplied with water by the North Strabane Water Company from Little Chartiers Creek; described under Canonsburg Borough supply.
4. Chartiers Township, Washington County, is partially supplied with water by the North Strabane Water Company from Little Chartiers Creek; described under Canonsburg Borough supply.
5. Coal Township, Northumberland County, is partially supplied with water by the Roaring Creek Water Company from the South Branch of Roaring Creek; described under Shamokin Borough supply.
6. Cumberland Valley Township, Bedford County, is partially supplied with water by the Evitts Creek Water Company from Evitts Creek. The twenty-one unsatisfactory properties on the watersheds were reinspected. Twenty-three pollutions were abated upon sixteen of the unsatisfactory properties, leaving seven properties in an unsatisfactory condition at the close of the year.
7. Derry Township, Westmoreland County, is partially supplied with water by the Derry Water Company from Ethel Springs and McKees Run; described under Derry Borough supply.
8. Gibson Township, Cameron County, is partially supplied with water by the Driftwood Water Company from Nanny Run; described under Driftwood Borough supply.

9. Hanover Township, Lehigh County, is partially supplied with filtered water by the Bethlehem City Water Company from the Lehigh River.

10. Logan Township, Blair County, is partially supplied with water by the Allegheny Water Company from Mill Run; described under Allegheny Township supply.

11. Lower Nazareth Township, Northampton County, is partially supplied with water by the Blue Mountain Consolidated Water Company from Ross Common Creek; described under Nazareth Borough supply.

12. Moreland Township, Montgomery County, is partially supplied with water by the Moreland Springs Water Company from Pennypack Creek; described under Jenkintown Borough supply.

13. Mt. Carmel Township, Northumberland County, is partially supplied with water by the Bear Gap Water Company from the South Branch of Roaring Creek; described under Marion Heights Borough supply.

14. North Strabane Township, Washington County, is partially supplied with water by the North Strabane Water Company from Little Chartiers Creek; described under Canonsburg Borough supply.

15. Susquehanna Township, Dauphin County, is partially supplied with water by the Dauphin Consolidated Water Company from Stony Creek; described under Dauphin Borough supply.

16. Upper Nazareth Township, Northampton County, is partially supplied with water by the Blue Mountain Consolidated Water Company from Ross Common Creek; described under Nazareth Borough supply.

17. Washington Township, Franklin County, is partially supplied with water by the Waynesboro Water Company from Little Antietam Creek; described under Waynesboro supply.

The two State institutions whose water supplies were inspected or reinspected are as follows:

1. The Pennsylvania State Sanatorium for Tuberculosis No. 1, at Mont Alto, Franklin County, is supplied with water from seven springs. An emergency supply is taken from the West Branch of Little Antietam Creek. The watershed is uninhabited.

2. The Pennsylvania Training School at Morganza, Cecil Township, Washington County, is supplied with water from Chartiers Creek. The two unsatisfactory properties on the watershed were reinspected. Two pollutions were abated upon the two unsatisfactory properties, leaving all properties on the watershed in a satisfactory condition at the close of the year.

The eighteen industrial water supplies which were inspected or reinspected are as follows:

1. The Pennsylvania Railroad shops and trains at Altoona are partially supplied with water from Blair Gap Run by the Blair Gap Water Supply Company; described under Hollidaysburg Borough supply.

2. The Pennsylvania Railroad tanks at Denholm, Mifflin County, are supplied with water from Licking Creek by the Clear View Water Supply Company. The one camp on the watershed was inspected and found to be in an unsatisfactory condition. The three pollutions were abated at the camp, leaving the watershed in a satisfactory condition at the close of the year.

3. The Pennsylvania Railroad Company is supplied with water by the Summit Water Supply Company for industrial purposes and for the filling of water tanks in passenger coaches from the Little Conemaugh River. The watershed is uninhabited.

4. The Pennsylvania Railroad Company shops at Renovo, Clinton County, are supplied with water from Paddy Run. The ten properties on the watershed were inspected and found to be in a satisfactory condition.

5. The Philadelphia and Reading Railway Company, at Cressona, Schuylkill County, is supplied with water from Nosedaw and Beaver Runs. The forty-five unsatisfactory properties on the watersheds were reinspected. Sixty-two pollutions were abated upon twenty-four of the unsatisfactory properties, leaving twenty-one properties in an unsatisfactory condition at the close of the year.

6. The Philadelphia and Reading Railway Company, at Reading, Berks County, is supplied with water from the Tulpehocken Creek. Two thousand one hundred and eighty-five of the properties on the watershed were inspected, and all but three hundred and twenty-eight were found to be in a satisfactory condition. Four hundred and eighty pollutions were abated upon two hundred and seventy-one of the unsatisfactory properties, leaving fifty-eight properties in an unsatisfactory condition at the close of the year.

7. The Philadelphia and Reading Railway Company, at Reading, Berks County, is partially supplied with water from a spring run. The two unsatisfactory proper-

ties on the watershed were inspected. Seven pollutions were abated upon the two unsatisfactory properties, leaving one property in an unsatisfactory condition at the close of the year.

8. Peters Paper Mill Company and eleven houses at Kingston, Derry Township, Westmoreland County, are supplied with water from a spring run. The one unsatisfactory property on the watershed was reinspected. Two pollutions were abated upon the one unsatisfactory property, leaving all properties in a satisfactory condition at the close of the year.

9. The Strickler Mining Operation in Mt. Pleasant Township, Westmoreland County, is partially supplied with water by the Mt. Pleasant Coke Company from Township Line Run. The three unsatisfactory properties on the watershed were reinspected. Five pollutions were abated upon two of the unsatisfactory properties, leaving one property in an unsatisfactory condition at the close of the year.

10. The Westmoreland-Connellsville Coal and Coke Company's Fort Palmer Works No. 1, Fairfield Township, Westmoreland County, is supplied with water from a spring run. The one unsatisfactory property on the watershed was reinspected. The one pollution was abated upon the one unsatisfactory property, leaving all properties in a satisfactory condition at the close of the year.

11. The Thompson-Connellsville Coke Company at Thompson Village No. 1, Redstone Township, Fayette County, is supplied with water by the General Water Company from the Monongahela River. They also take water from an underground stream and Dunlap Creek.

12. Tower Hill-Connellsville Coke Company, Tower Hill Village No. 1, Redstone Township, Fayette County, is supplied with water by the General Water Company from the Monongahela River.

13. The W. J. Rainey Coke Ovens at Allison Village No. 1, Redstone Township, Fayette County, are supplied with water by the General Water Company from the Monongahela River. They also take water from a small mountain stream.

14. The Struthers Coal and Coke Company at Fairbanks Village, Redstone Township, Fayette County, is supplied with water by the General Water Company from the Monongahela River and from two reservoirs on Dunlap Creek. The two properties on the watershed of Dunlap Creek were inspected and one found to be in an unsatisfactory condition. The one unsatisfactory property remained unchanged at the close of the year.

15. The Orient Coke Company at Orient Village, Redstone Township, Fayette County, is supplied with water by the General Water Company from the Monongahela River and Dunlap Creek; described under The Struthers Coal and Coke Company supply.

16. Brier Hill Coke Company at Brier Hill Village, Redstone Township, Fayette County, is supplied with water by the General Water Company from twenty-two drilled wells, four springs and the Monongahela River. The Brier Hill Coke Company also takes water from six reservoirs on a tributary to Dunlap Creek. The watershed is uninhabited.

17. The Republic Iron and Steel Company at Republic Village, Redstone Township, Fayette County, is supplied with water by the General Water Company from the Monongahela River.

18. The W. J. Rainey Coke Ovens at Royal Village, Redstone Township, Fayette County, are supplied with water by the General Water Company from the Monongahela River. W. J. Rainey also takes water from Rowes Run. The fifteen properties on the watershed of Rowes Run were inspected and all but eight were found to be in a satisfactory condition. Two pollutions were abated upon two of the unsatisfactory properties, leaving six properties in an unsatisfactory condition at the close of the year.

THE FOLLOWING IS A LIST OF WATER COMPANIES, MUNICIPALITIES AND INDUSTRIES MAINTAINING A REGULAR PATROL OF THE WATERSHEDS ABOVE THEIR WATER WORKS INTAKES IN COMPLIANCE WITH THE PERMIT ISSUED TO THEM BY THE STATE DEPARTMENT OF HEALTH.

Albion Borough, Erie County.
Altoona City, Blair County.
Bangor Water Company, Bangor Borough, Northampton County.
Bath Borough, Northampton County.
Bens Creek Water Company, Portage Township, Cambria County.
Berwick Water Company, Berwick Borough, Columbia County.
Biglerville Water Company, Biglerville Borough, Adams County.
Bloomfield Water and Sewer Company, Bloomfield Borough, Perry County.
Buck Hill Water Company, Buck Hill Falls Village, Monroe County.
Bunday Water Company, Linesville Borough, Crawford County.
Canawacta Water Supply Company, Susquehanna Borough, Susquehanna County.
Catawissa Water Company, Catawissa Borough, Columbia County.
Chatham Water Company, Avis Borough, Clinton County.
Citizens Water Company, Canton Borough, Bradford County.
Citizens Water Company of Confluence, Confluence Borough, Somerset County.
Citizens Water Company of McDonald, Pa., McDonald Borough, Washington County.
Citizens Water Company of Scottdale, Scottdale Borough, Westmoreland County.
Clearfield Water Company, Clearfield Borough, Clearfield County.
Clear Springs Water Company, Catasaqua Borough, Lehigh County.
Conemaugh and Franklin Water Company, East Conemaugh and Franklin Boroughs, Franklin County.
Connellsville Water Company, Connellsville City, Fayette County.
Dauphin Consolidated Water Company, Dauphin Borough, Dauphin County.
Dingman Ferry Water Company, Dingman Ferry Village, Pike County.
Doylestown Borough, Bucks County.
DuBois Borough, Clearfield County.
East Stroudsburg Borough, Monroe County.
Edinboro Borough, Erie County.
Emporium Water Company, Emporium Borough, Cameron County.
Evitts Creek Water Company, Cumberland Valley Township, Bedford County.
Fall Brook Coal Company, Duncan Township, Tioga County.
Falls Creek Borough, Jefferson County.
Garrett Water Company, Garrett Borough, Somerset County.
Gettysburg Water Company, Gettysburg Borough, Adams County.
Girard Water Company, Girardville Borough and West Mahanoy Township, Schuylkill County.
Glenn Mills School (Girls' Department), Middletown Township, Delaware County.
Hallstead Water Company, Halstead and Great Bend Boroughs, Susquehanna County.
Hanover and McSherrystown Water Company, Hanover Borough, York County and McSherrystown Borough, Adams County.
Haysville Water Company, Haysville and Osborne Boroughs, Allegheny County.
Hellam Water Company, Hellam Borough, York County.
Honesdale Consolidated Water Company, Honesdale Borough, Wayne County.
Hooversville Water Company, Hooversville Borough, Somerset County.
Huntingdon Water Supply Company, Huntingdon Borough, Huntingdon County.
Jacks Mountain Water Company, Mapleton Borough, Huntingdon County.
Jersey Shore Water Company, Jersey Shore Borough, Lycoming County.
Johnsonburg Water Company, Johnsonburg Borough, Elk County.
Johnstown Water Company, Johnstown City, Cambria County.
Juniata Borough, Blair County.
Koppel Water Company, Koppel Village, Beaver County.
Langhorne Spring Water Company, Attleboro, Langhorne and Langhorne Manor Boroughs, Bucks County.
Ligonier Borough, Westmoreland County.
Lykens Water Company, Lykens Borough, Dauphin County.
Mansfield Water Company, Mansfield Borough, Tioga County.
Marie Water Company, Expedit Village, Cambria County.
Marietta Gravity Water Company, Marietta Borough, Lancaster County.
Marysville Water Company, Marysville Borough, Perry County.
Matamoras Citizens Water Company, Matamoras Borough, Pike County.
Mauch Chunk Water Company, Mauch Chunk Borough, Carbon County.
Mohnsville Water Company, Mohnton Borough, Berks County.
Moreland Springs Water Company, Jenkintown Borough and Moreland Township, Montgomery County.
Morrellville and Cambria Borough Water Company, Johnstown City, Cambria County.

Mountain Water Company, Emaus Borough, Lehigh County.
Mt. Penn Suburban Water Company, Mt. Penn Borough, Berks County.
Mountville Borough, Lancaster County.
Muncy Water Supply Company, Muncy Borough, Lycoming County.
New Wilmington Water Supply Company, New Wilmington Borough, Lawrence County.
North East Borough, Erie County.
Pennsylvania Railroad Company, Renovo shops, Renovo Borough, Clinton County.
Pennsburg Water Company, Pennsburg Borough, Montgomery County.
Portage Water Company, Portage Borough, Cambria County.
Port Allegany Water Company, Port Allegany Borough, McKean County.
Portland Water Company, Portland Borough, Northampton County.
Punxsutawney Water Company, Punxsutawney Borough, Jefferson County.
Red Hill Water Company, Red Hill Borough, Montgomery County.
Renovo Borough, Clinton County.
Reynoldsville Water Company, Reynoldsville Borough, Jefferson County.
Roaring Creek Water Company, Shamokin Borough, Northumberland County.
Roulette Water Company, Roulette Village, Potter County.
Sand Spring Water Company of Meyersdale Borough, Somerset County.
Scranton Gas and Water Company, Scranton City, Lackawanna County.
Sellersville Borough, Bucks County.
Sheffield Water Company, Sheffield Village, Warren County.
South Fork Water Company, South Fork Borough, Cambria County.
Springfield Consolidated Water Company, Philadelphia suburbs.
Three Springs Water Company, Three Springs Borough, Huntingdon County.
Tioga Water Works Company, Tioga Borough, Tioga County.
Towanda Water Company, Towanda Borough, Bradford County.
Tremont Gas and Water Company, Tremont Borough, Schuylkill County.
Trout Run Water Company, Duncannon Borough, Perry County.
Troy Borough, Bradford County.
Uniontown Water Company, Uniontown Borough, Fayette County.
Upper Mauch Chunk Water Company, Mauch Chunk Borough, Carbon County.
Warren Water Company, Warren Borough, Warren County.
Washington Water Supply Company, Washington Township, Lehigh County.
Weatherly Water Company, Weatherly Borough, Carbon County.
West Conshohocken Water Company, West Conshohocken Borough, Montgomery County.
Windber Water and Power Company, Scalp Level Borough, Cambria County, and Windber Borough, Somerset County.
Wyalusing Water Company, Wyalusing Borough, Bradford County.
Wyoming Valley Water Supply Company, Hazleton City, Luzerne County.

THE FOLLOWING WATER COMPANIES REPORT THE WATERSHEDS FROM WHICH THEY OBTAIN THEIR SUPPLY TO BE UNINHABITED.

Middleburg Water Company, Middleburg Borough, Snyder County.
Millheim Water Company, Millheim Borough, Centre County.
Morgantown Water Company, Morgantown Village, Berks County.
Mt. Jewett Water Company, Mt. Jewett Borough, McKean County.
Smethport Water Company, Smethport Borough, McKean County.
Venango Oil and Land Company, Reno Village, Venango County.

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15. GENERAL SANITATION.

Some industrial pollutions cannot be classed as sewage pollutions under the law. They may bring about a very insanitary condition in a natural watercourse, requiring abatement on the score of being a common nuisance.

Pollution of the ground water supply by sewage from a village or town or any other source is matter for investigation and action by the State Department of Health. The Commissioner of Health is charged with the preservation of the purity of such waters in the interest of public health. All such work done by field officers which has to deal with the disposal of sewage in villages and towns comes more particularly under the work of municipal sanitation. In many villages and hamlets throughout the State general practices respecting disposal of household wastes are insanitary and possibly the cause of disease and mortality. These subjects are properly investigated by the Department of Health, since there is no other body

having jurisdiction in the fifteen hundred townships wherein reside about one-third of the population of the Commonwealth. This class of work is distinct from other field office work and is treated under the head of General Sanitation.

Within the city, borough, village and township the remedy for the various nuisances in the streams, the pollution of public ground water supply, general insanitary conditions respecting disposal of household wastes and cause of disease and mortality is found quite often to be a public sewerage system. Considerable time must be allowed naturally for the discussion of the introduction of such an improvement and for the inauguration of a sewer system. Therefore, it is not reasonable to expect immediate abatements of these thousands of pollutions within the municipalities. However, the sanitary survey forms a basis upon which to make a beginning.

The following tables give a summary of sanitary surveys on certain watersheds and a summary of sanitary surveys in certain cities, boroughs and townships:

SUMMARY OF SANITARY SURVEY OF CERTAIN MINOR WATERSHEDS MADE DURING 1915.

Name of Stream.	Occupied Properties Inspected and Re-inspected.			Abatements.		
	Total.	Satisfactory.	Unsatisfactory.	Properties.	Pollutions.	Properties unchanged.
Aquashicola Creek, Carbon County,	2	0	2	1	3	1
Bald Eagle Creek, Centre and Carbon Counties,	385	272	113	1	1	112
Beaver Run, Somerset County,	3	0	3	1	1	2
Beech Creek, Clinton County,	109	92	17	1	2	16
Bobbs Creek, Bedford County,	1	0	1	1	2	0
Brandywine Creek, Chester and Delaware Counties,	6	0	6	3	3	3
Brokenstraw Creek, Warren County,	544	484	60	25	41	25
Brush Creek, Fulton County,	1	0	1	0	11	0
Brush Creek, Somerset County,	1	0	1	0	0	1
Brush Run, Blair County,	3	0	3	0	0	3
Buck Run, Chester County,	969	671	298	171	249	127
Buffalo Creek, Perry County,	353	328	25	2	5	23
Buffalo Creek, Union County,	1	0	1	0	0	1
Bushkill Creek, Pike and Monroe Counties,	6	0	6	4	9	2
Catawissa Creek, Columbia and Schuylkill Counties,	1,820	1,661	159	76	150	85
Chester Creek, Chester and Delaware Counties,	43	0	43	32	60	11
Chillisquaque Creek, Columbia, Montour and Northumberland Counties,	831	767	64	45	70	20
Clearfield Creek, Cambria County,	1	0	1	1	3	0
Cobbs Creek, Delaware County,	125	0	125	54	142	71
Cocalico Creek, Berks County,	1	0	1	1	1	0
Codorus Creek, York County below York intake,	79	0	79	10	17	69
Conestoga Creek, Lancaster County below Lancaster intake,	70	0	70	38	106	32
Conewango Creek, Warren County,	15	0	15	13	32	2
Conodoguinet Creek, Cumberland County below Carlisle intake,	11	0	11	9	17	2
Connoquenessing Creek, Beaver, Butler and Lawrence Counties,	49	0	49	8	33	41
Coxey Creek, Somerset County,	1	0	1	0	0	1
Crum Creek, Delaware County below Springfield Consolidated Water Company intake,	49	0	49	42	65	7
Cush Creek, Indiana County,	229	141	88	0	0	88
Darby Creek, Chester and Delaware Counties,	233	0	233	29	77	204
Dunkard Creek, Greene County,	205	155	50	3	3	47
Dunnings Creek, Bedford County,	1	0	1	1	1	0
Dyberry Creek, Wayne County,	29	0	29	21	58	8
East Branch of Brandywine Creek, Chester County,	7	0	7	4	9	3
Figart Run, Cambria County,	1	0	1	0	0	1
Fishing Creek, Clinton and Columbia Counties,	1,301	1,234	67	3	4	64
French Creek, Erie and Venango Counties below Cambridge Springs intake,	39	0	39	14	23	25
Ithan Creek, Delaware County,	2	0	2	0	0	2
Juniata Creek, Perry County,	236	216	20	7	7	13
Kettle Creek, Clinton and Potter Counties,	400	348	52	17	38	35
Kishacoquillas Creek, Mifflin County,	5	0	5	0	0	5
Lackawaxen Creek, Pike and Wayne Counties,	621	62	559	498	1,149	61
Larrys Creek, Lycoming County,	28	0	28	9	20	19

SUMMARY OF SANITARY SURVEY OF CERTAIN MINOR WATERSHEDS MADE DURING 1915—Continued.

Name of Stream.	Occupied Properties Inspected and Re-inspected.			Abatements.		
	Total.	Satisfactory.	Unsatisfactory.	Properties.	Pollutions.	Properties unchanged.
Laurel Run, Cambria County,	1	0	1	1	10	0
Leggetts Creek, Lackawanna County below Scranton Gas & Water Company intake,	66	0	66	3	8	63
Little Darby Creek, Chester and Delaware Counties,	42	0	42	3	80	3
Little Swatara Creek, Berks County,	1	0	1	1	1	1
Lizard Creek, Schuylkill County,	1	0	1	1	1	0
Loyalsock Creek, Lycoming and Sullivan Counties,	27	0	27	17	30	10
Lycoming Creek, Lycoming and Sullivan Counties,	2	0	2	1	1	1
McDonald Run, Beaver County,	5	0	5	0	0	5
McMichaels Creek, Monroe County,	12	0	12	11	37	1
Mahanoy Creek, Columbia, Northumberland and Schuylkill Counties,	4,357	3,727	630	243	520	387
Mahantango Creek, Northumberland and Schuylkill Counties,	1,759	1,508	251	69	87	184
Mahoning Creek, Armstrong and Jefferson Counties,	159	136	23	19	28	4
Marshall Creek, Monroe County,	3	0	3	3	19	0
Mehoopany Creek, Sullivan County,	1	0	1	1	2	0
Meshoppen Creek, Susquehanna and Wyoming Counties,	28	0	28	22	43	6
Middle Creek, Snyder County,	1	0	1	0	0	1
Mill Creek, Montgomery County,	560	499	61	43	65	18
Moshannon Creek, Centre and Clearfield Counties,	3	1	2	0	0	2
Muddy Creek, Greene County,	6	1	5	3	6	2
Muncy Creek, Lycoming and Sullivan Counties,	28	0	28	25	41	3
Neshaminy Creek, Bucks County below Springfield Consolidated Water Company intake,	14	0	14	7	25	7
Octorora Creek, Chester County,	2	0	2	2	2	0
Oil Creek, Crawford and Venango Counties,	53	0	53	19	51	34
Paxton Creek, Dauphin County,	48	0	48	0	0	48
Perkiomen Creek, Bucks and Montgomery Counties,	189	0	189	138	234	51
Pine Creek, Potter and Tioga Counties,	25	13	12	1	1	11
Pocono Creek, Monroe County,	3	0	3	3	5	0
Poplar Run, Blair County,	2	0	2	2	4	0
Raccoon Creek, Beaver County,	3	0	3	0	0	3
Red Bank Creek, Clarion County below New Bethlehem intake,	13	0	13	2	5	11
Red Clay Creek, Chester County,	8	0	8	1	1	7
Redstone Creek, Fayette County,	158	150	8	8	9	0
Ridley Creek, Delaware County below Media intake,	15	0	15	12	42	3
Roaring Creek, Columbia and Northumberland Counties,	822	742	80	4	4	76
Rock Creek, Adams County,	1	0	1	1	2	0
Rock Run, Chester County below proposed Coatesville intake,	85	46	39	18	29	21
Shade Creek, Huntingdon County,	2	0	2	1	2	1
Shamokin Creek, Columbia and Northumberland Counties,	3,592	3,210	382	25	27	357
Sherman Creek, Perry County,	1,764	1,597	167	57	81	111
Shohola Creek, Pike County,	2	0	2	1	4	1
Sideling Hill Creek, Huntingdon County,	1	0	1	1	2	0
Sinnemahoning Creek, Cameron, Clinton and Potter Counties,	1,422	1,173	249	84	132	168
Six Mile Run, Bedford County,	1	0	1	0	0	1
South Fork Creek, Cambria County,	2	0	2	0	0	2
Spring Creek, Centre County,	6	0	6	2	5	4
Stony Creek, Cambria County,	19	0	19	1	2	18
Sugar Creek, Bradford County,	4	0	4	1	4	3
Tacony Creek, Montgomery County,	121	0	121	11	27	110
Ten Mile Creek, Greene County,	855	567	288	42	84	246
Three Springs Creek, Huntingdon County,	1	0	1	0	0	1
Towanda Creek, Bradford and Tioga Counties,	6	1	5	2	6	3

SUMMARY OF SANITARY SURVEY OF CERTAIN MINOR WATERSHEDS MADE DURING 1915—Continued.

Name of Stream.	Occupied Properties Inspected and Re-inspected.			Abatements.		
	Total.	Satisfactory.	Unsatisfactory.	Properties.	Pollutions.	Properties unchanged.
Tunkhannock Creek, Lackawanna, Susquehanna and Wyoming Counties,	187	0	187	155	329	32
Two Lick Creek, Indiana County below Indiana intake,	2	0	2	2	11	0
Wallenpaupack Creek, Lackawanna, Pike and Wayne Counties,	278	217	61	47	75	15
West Branch of Conocheague Creek, Franklin County,	6,533	6,190	343	235	390	108
West Branch of Brandywine Creek, Chester County,	34	0	34	23	65	11
White Clay Creek, Chester County,	9	0	9	6	9	3
Whiteley Creek, Greene County,	205	157	48	20	35	28
Wiconisco Creek, Schuylkill County,	602	513	89	3	3	86
Wissahickon Creek, Montgomery County,	90	0	99	51	97	39
Wyalusing Creek, Bradford and Susquehanna Counties,	10	0	10	5	8	5
Total,	33,067	26,879	6,188	2,641	5,159	3,558

SPECIAL SANITARY SURVEY IN CERTAIN CITIES, BOROUGHS AND TOWNSHIPS DURING THE YEAR 1915.

Place.	Occupied Properties Inspected and Re-inspected.			Abatements.		
	Total.	Satisfactory.	Unsatisfactory.	Properties.	Pollutions.	Properties unchanged.
Chester City, Delaware County,	1	0	1	1	2	0
Pittsburgh City, Allegheny County,	2	1	1	0	0	1
Ambler Borough, Montgomery County,	23	0	23	7	13	16
Ashland Borough, Schuylkill County,	2	0	2	1	4	1
Atglen Borough, Chester County,	3	0	3	2	3	1
Athens Borough, Bradford County,	1	0	1	1	1	0
Avondale Borough, Chester County,	7	0	7	6	13	1
Barnesboro Borough, Cambria County,	1	0	1	1	1	1
Bechtelsville Borough, Berks County,	1	0	1	1	3	0
Birdsboro Borough, Berks County,	3	0	3	2	7	1
Blain Borough, Perry County,	119	101	18	16	26	3
Bloomfield Borough, Perry County,	253	205	48	2	2	46
Bloomng Valley Borough, Crawford County,	1	0	1	1	2	0
Bloomsburg Town, Columbia County,	1	0	1	1	1	0
Blossburg Borough, Tioga County,	665	388	277	27	27	250
Burgettstown Borough, Washington County,	450	264	186	0	0	186
Camp Hill Borough, Cumberland County,	359	359	0	0	0	0
Clarks Green Borough, Lackawanna County,	12	0	12	1	2	11
Clarks Summit Borough, Lackawanna County,	14	0	14	11	25	3
Collegeville Borough, Montgomery County,	4	0	4	2	7	2
Connoquenessing Borough, Butler County,	11	0	11	4	6	7
Coopersburg Borough, Lehigh County,	1	0	1	1	2	0
Conyngham Borough, Luzerne County,	135	120	15	0	0	15
Covington Borough, Tioga County,	154	137	17	15	34	2
Dallas Borough, Luzerne County,	207	169	38	0	0	38
Dalton Borough, Lackawanna County,	270	186	84	0	0	84
Delaware Water Gap Borough, Monroe County,	1	0	1	1	1	0
Downingtown Borough, Chester County,	16	0	16	9	9	7
Duncannon Borough, Perry County,	14	0	14	12	12	2
Duncansville Borough, Blair County,	348	325	23	1	1	22
DuBoistown Borough, Lycoming County,	1	0	1	1	4	0
Dundaff Borough, Susquehanna County,	10	0	10	8	21	2
Dushore Borough, Sullivan County,	2	0	2	0	0	2
East Greenville Borough, Montgomery County,	42	0	42	32	56	10
Elkland Borough, Tioga County,	386	380	6	5	9	2
East Lansdowne Borough, Delaware County,	113	113	0	0	0	0
East Mauch Chunk Borough, Carbon County,	1	0	1	1	4	0
East Stroudsburg Borough, Monroe County,	46	0	46	31	55	15
Freeland Borough, Luzerne County,	1	0	1	0	0	1
Forest City Borough, Susquehanna County,	1,208	269	939	0	0	939
Greenlane Borough, Montgomery County,	5	0	5	4	6	1
Glenburn Borough, Lackawanna County,	100	80	20	0	0	20
Halifax Borough, Dauphin County,	9	0	9	7	13	2
Hallstead Borough, Susquehanna County,	93	0	93	5	5	88
Hanover Borough, York County,	1	0	1	0	0	1
Harmony Borough, Butler County,	10	0	10	2	2	8
Hawley Borough, Wayne County,	604	564	40	0	0	40
Hellertown Borough, Northampton County,	40	0	40	3	3	37
Herndon Borough, Northumberland County,	6	0	6	0	0	6
Highspire Borough, Dauphin County,	4	0	4	4	4	0
Honesdale Borough, Wayne County,	883	131	752	5	5	747
Hopbottom Borough, Susquehanna County,	17	0	17	15	36	2
Hulmeville Borough, Bucks County,	13	0	13	1	2	12
Hydetown Borough, Crawford County,	8	0	8	3	3	5
Jefferson Borough, Greene County,	1	0	1	0	0	1
Knoxville Borough, Tioga County,	308	300	8	6	18	2
Laceyville Borough, Wyoming County,	74	0	74	12	25	62
Langhorne Borough, Bucks County,	124	96	28	27	59	1
Landisburg Borough, Perry County,	96	91	5	5	7	0
Lansdowne Borough, Delaware County,	9	0	9	1	2	8
Laplume Borough, Lackawanna County,	87	68	19	1	1	18
Laporte Borough, Sullivan County,	6	0	6	0	0	6
Lawrenceville Borough, Tioga County,	189	186	3	3	6	0
Le Raysville Borough, Bradford County,	23	0	23	4	6	19
Lehighton Borough, Carbon County,	1	0	1	1	1	0

SPECIAL SANITARY SURVEY IN CERTAIN CITIES, BOROUGHS AND TOWNSHIPS DURING THE YEAR 1915—Continued.

Place.	Occupied Properties Inspected and Re-inspected.			Abatements.		
	Total.	Satisfactory.	Unsatisfactory.	Properties.	Pollutions.	Properties unchanged.
Lemoyne Borough, Cumberland County,	471	471	0	0	0	0
Little Meadows Borough, Susquehanna County,	2	0	2	2	2	0
Liverpool Borough, Perry County,	223	184	39	25	50	14
Lykens Borough, Dauphin County,	2	0	2	2	3	0
McDonald Borough, Washington County,	769	124	645	0	0	645
McEwensville Borough, Northumberland County,	2	0	2	0	0	2
Mahanoy City Borough, Schuylkill County,	3	0	3	2	4	1
Malvern Borough, Chester County,	1	0	1	1	3	0
Manheim Borough, Lancaster County,	4	0	4	0	0	4
Manor Borough, Westmoreland County,	1	0	1	1	1	0
Mansfield Borough, Tioga County,	610	312	298	0	0	298
Marion Heights Borough, Northumberland County,	322	294	28	0	0	28
Marysville Borough, Perry County,	19	0	19	13	19	6
Matamoras Borough, Pike County,	401	386	15	15	59	0
Mechanicsburg Borough, Cumberland County,	1,472	1,472	0	0	0	0
Mercersburg Borough, Franklin County,	526	355	171	11	11	160
Meshoppen Borough, Wyoming County,	53	0	53	42	146	11
Middletown Borough, Dauphin County,	1	0	1	1	5	5
Middleport Borough, Schuylkill County,	6	0	6	0	0	6
Milford Borough, Pike County,	365	361	4	0	0	4
Millerstown Borough, Perry County,	191	166	25	20	72	5
Mohnton Borough, Berks County,	5	0	5	5	13	0
Mont Alto Borough, Franklin County,	138	135	3	3	9	0
Montoursville Borough, Lycoming County,	1	0	1	0	0	1
Mount Joy Borough, Lancaster County,	2	0	2	0	0	2
Mount Pleasant Borough, Westmoreland County,	2	0	2	2	2	0
Mountville Borough, Lancaster County,	3	0	3	0	0	3
Muncy Borough, Lycoming County,	1	0	1	1	3	0
Nazareth Borough, Northampton County,	18	0	18	3	3	15
New Buffalo Borough, Perry County,	49	49	0	0	0	0
New Milford Borough, Susquehanna County,	2	0	2	0	0	2
New Paris Borough, Bedford County,	5	0	5	3	5	2
New Philadelphia Borough, Schuylkill County,	28	0	28	0	0	28
Newry Borough, Blair County,	1	0	1	1	1	0
Nicholson Borough, Wyoming County,	95	0	95	72	219	23
Norristown Borough, Montgomery County,	5	0	5	2	2	3
Northumberland Borough, Northumberland County,	1	0	1	0	0	1
North Wales Borough, Montgomery County,	207	0	207	44	123	163
Osceola Borough, Tioga County,	193	186	7	7	11	0
Oxford Borough, Chester County,	30	0	30	15	33	15
Paxtang Borough, Dauphin County,	2	0	2	1	1	1
Pen Argyl Borough, Northampton County,	13	0	13	0	0	13
Pennsburg Borough, Montgomery County,	12	0	12	8	11	4
Perkasie Borough, Bucks County,	72	0	72	7	20	65
Pleasantville Borough, Venango County,	5	0	5	2	5	3
Port Carbon Borough, Schuylkill County,	15	0	15	0	0	15
Pottstown Borough, Montgomery County,	1	0	1	1	4	0
Pringle Borough, Luzerne County,	340	301	39	0	0	39
Prompton Borough, Wayne County,	84	55	29	24	37	5
Riceville Borough, Crawford County,	4	0	4	1	3	3
Riverside Borough, Northumberland County,	108	108	0	0	0	0
Roaring Springs Borough, Blair County,	1	0	1	0	0	1
Roseville Borough, Tioga County,	67	57	10	6	6	4
Rouseville Borough, Venango County,	21	0	21	2	2	19
Salladasburg Borough, Lycoming County,	6	0	6	4	13	2
Schwenkville Borough, Montgomery County,	4	0	4	0	0	4
Shiremanstown Borough, Cumberland County,	190	190	0	0	0	0
Silverdale Borough, Bucks County,	3	0	3	3	6	0
Smithton Borough, Westmoreland County,	202	165	37	0	0	37
Snydertown Borough, Northumberland County,	99	80	19	16	27	3
South Greensburg Borough, Westmoreland County,	1	0	1	1	1	0
Spangler Borough, Cambria County,	1	0	1	0	0	1
Spartansburg Borough, Crawford County,	24	0	24	4	4	21
Starrucca Borough, Wayne County,	125	101	24	23	46	1
Stroudsburg Borough, Monroe County,	20	0	20	18	21	2
Susquehanna Borough, Susquehanna County,	4	0	4	0	0	4

SPECIAL SANITARY SURVEY IN CERTAIN CITIES, BOROUGHS AND TOWNSHIPS DURING THE YEAR 1915—Continued.

Place.	Occupied Properties Inspected and Re-inspected.			Abatements.		
	Total.	Satisfactory.	Unsatisfactory.	Properties.	Pollutions.	Properties unchanged.
South West Greensburg Borough, Westmoreland County,	6	0	6	2	2	4
Thompson Borough, Susquehanna County,	124	64	60	0	0	60
Tioga Borough, Tioga County,	187	185	2	2	2	0
Tower City Borough, Schuylkill County,	568	517	51	0	0	51
Trappe Borough, Montgomery County,	3	0	3	3	3	0
Troy Borough, Bradford County,	181	0	181	127	302	54
Upland Borough, Delaware County,	549	68	481		1	481
Uniondale Borough, Susquehanna County,	119	115	4	2	2	2
Valencia Borough, Butler County,	20	0	20	6	11	14
Washingtonville Borough, Montour County,	88	68	20	16	38	4
Waverly Borough, Lackawanna County,	170	162	8	0	0	8
Waymart Borough, Wayne County,	167	151	16	16	36	0
Weatherly Borough, Carbon County,	2	0	2	2	2	0
Weissport Borough, Carbon County,	1	0	1	1	1	0
West Alexander Borough, Washington County,	144	136	8	0	0	8
West Fairview Borough, Cumberland County,	462	319	143	16	16	127
West Grove Borough, Chester County,	122	0	122	46	93	76
Westfield Borough, Tioga County,	451	262	189	2	5	187
West Reading Borough, Berks County,	22	0	22	3	6	20
West Telford Borough, Montgomery County,	29	0	29	28	41	1
Williamstown Borough, Dauphin County,	13	0	13	7	7	6
Wormleysburg Borough, Cumberland County,	236	94	142	0	0	142
Worthington Borough, Armstrong County,	143	100	43	1	2	42
East Union Township, Schuylkill County,	2	0	2	2	9	0
Total,	19,063	12,326	6,737	1,009	2,124	5,734

SUMMARY OF SANITARY FIELD INSPECTION FOR THE YEAR 1915 CLASSIFIED ACCORDING TO THE MAJOR WATERSHEDS OF THE STATE.

	Occupied Properties Inspected and Re-inspected.			Abatements.		
	Total.	Satisfactory.	Unsatisfactory.	Properties.	Pollutions.	Properties unchanged.
Allegheny River,	8,200	5,901	2,299	1,011	1,816	1,305
Delaware River,	9,304	4,974	4,330	1,920	3,850	2,412
Genesee River,	785	716	69	56	124	14
Lake Erie,	5,575	4,709	866	359	563	507
Monongahela River,	5,361	3,108	2,253	859	1,547	1,394
Ohio River,	4,156	964	3,192	74	187	3,118
Potomac River,	8,830	8,172	658	367	577	293
Schuylkill River,	4,969	3,105	1,864	920	1,771	948
Susquehanna River,	45,444	36,309	9,135	2,879	5,458	6,291
Total,	92,624	67,958	24,666	8,445	15,893	16,282

It will be noted that sixty-four properties on the watersheds of the following ice supplies were inspected and reinspected and all but twenty-one were found to be in a satisfactory condition. Thirty-two pollutions were abated upon seventeen unsatisfactory properties, leaving six unsatisfactory properties on the watersheds at the close of the year.

	Occupied Properties Inspected and Re-inspected.			Abatements.		
	Total.	Satisfactory.	Unsatisfactory.	Properties.	Pollutions.	Properties unchanged.
Sugar Creek, Spalding ice dam, Troy Borough, Bradford County,	1	0	1	1	1	0
Spring Run, Moore's ice reservoir, Berwick Borough, Columbia County,	1	1	0	0	0	0
Spring Run, Smith's ice reservoir, Berwick Borough, Columbia County,	4	2	2	0	0	2
Zerbe Run, Reichert's ice reservoir, Zerbe Township, Northumberland County,	55	40	15	13	27	2
Fishing Creek, Robert's ice dam, Marysville Borough, Perry County,	3	0	3	3	4	2
Total,	64	43	21	17	32	6

SANITARY INSPECTION OF PARKS, FAIR GROUNDS AND CAMPS.

The sanitary inspection of fair grounds, parks and camps received more detail attention than in previous years. More than eight hundred inspections were made. The Department kept itself informed of the dates for which county fairs and other temporary gatherings were scheduled, and in order that the regulations of the Department might be enforced from the beginning, a point was made of having men on the grounds in many cases. The men worked under the supervision of inspectors in charge in districts throughout the State as they did in the regular inspection work. Each inspection covered not only general sanitary conditions, but the details of the source of water supply, its method of distribution and the method of sewerage and sewerage disposal, especially such features as it was found might be a menace to public health, and such conditions were ordered to be remedied forthwith. The inspectors also saw to it that the State regulations prohibiting the use of common drinking cups and towels were being enforced. The reporting was facilitated by the use of forms on which the various matters to be covered were outlined in detail.

THE FOLLOWING CAMP MEETING GROUNDS, PICNIC GROVES, AMUSEMENT PARKS, GYPSY, LUMBER AND CONSTRUCTION CAMPS WERE INSPECTED DURING THE YEAR.

Conewago Chapel Picnic Grounds, McSherrystown, Adams County.
St. John's Evangelical Lutheran Sunday School Picnic Grounds, Littlestown, Adams County.
Good Samaritan Fishing Camp Grounds, Mt. Joy Township, Adams County.
Witmers Park, McSherrystown, Adams County.
Conewago Trotting Association Race Track and Picnic Grounds, Hunterstown, Adams County.
Stonesifer Picnic Grove, Biglerville, Adams County.
St. James' Sunday School Picnic Grounds, Littlestown, Adams County.
Seels Grove Picnic Grounds, Littlestown, Adams County.
The Christ Reformed Church Picnic Grove, Littlestown, Adams County.
Weikert's Grove Picnic Grounds, Littlestown, Adams County.
Pittsburgh and Tarentum Camp Meeting Grounds, Birdville, Allegheny County.
Methodist Camp Meeting Association Camp Meeting Grounds, Leetsdale, Allegheny County.
Pittsburgh Field Club Recreation Park, Aspinwall, Allegheny County.

Port Vue Camp Meeting Grounds, Port Vue, Allegheny County.
Homestead Park and Camp Meeting Grounds, Homestead, Allegheny County.
Pittsburgh and Allegheny Matinee Club, Burnito Island, McKees Rocks, Allegheny County.
Pittsburgh Kennywood Park Company Amusement Park, Duquesne, Allegheny County.
Palm Garden Park, Picnic Grove, Mt. Washington, Allegheny County.
Linden Grove Picnic Grove, Castle Shannon, Allegheny County.
United Italian Republican Club Picnic Grove, Fair Haven, Allegheny County.
Park Hunting and Fishing Club, Wexford, Allegheny County.
Counsel of Jewish Women, Camp for Working Girls, Wexford, Allegheny County.
Crystal Springs Hunting and Fishing Club, Wexford, Allegheny County.
Olympia Park Picnic Grove, Versailles, Allegheny County.
Rosedale Park Picnic Grove, Millvale, Allegheny County.
West View Park Company, Amusement Park, West View, Allegheny County.
Pittsburgh, Butler, Harmony and New Castle Railroad Company Picnic Grove, Wexford, Allegheny County.
Reels Grove, Picnic Grounds, Perrysville, Allegheny County.
Allegheny County Rifle Club, Ewalt, Allegheny County.
Keystone Park, Recreation Park, Glenshaw, Allegheny County.
Verona Boat and Canoe Club, Verona, Allegheny County.
Minnetonka Boat and Canoe Club, Verona, Allegheny County.
Seminole Canoe Club, Verona, Allegheny County.
Keystone Canoe Club, Verona, Allegheny County.
Westinghouse Canoe Club, Verona, Allegheny County.
Sylvan Boat and Canoe Club, Verona, Allegheny County.
Algonquin Boat and Canoe Club, Verona, Allegheny County.
Outing Association of Joseph Horn Company, Recreation Camp, Bellview, Allegheny County.
Crescent Canoe Club, Verona, Allegheny County.
Beede-Hoon Club, Recreation Camp, Oakmont, Allegheny County.
S. M. Maughmen Recreation Camp, Oakmont, Allegheny County.
Sandy Nook Club, Recreation Camp, Harmarville, Allegheny County.
Little Jims Recreation Camp, Oakmont, Allegheny County.
No-Kix-Go Recreation Camp, Oakmont, Allegheny County.
Ninth Ward Republican Club Recreation Camp, Oakmont, Allegheny County.
Wynta Canoe Club, Oakmont, Allegheny County.
Neutral Club Recreation Camp, Oakmont, Allegheny County.
Baltimore Recreation Camp, Oakmont, Allegheny County.
Richerson Recreation Camp, Oakmont, Allegheny County.
Booth Recreation Camp, Oakmont, Allegheny County.
Rex Recreation Camp, Oakmont, Allegheny County.
Bud Recreation Camp, Oakmont, Allegheny County.
Bachelors Canoe Club, Oakmont, Allegheny County.
Allegheny Boat and Field Club, Oakmont, Allegheny County.
Triangle Recreation Camp, Oakmont, Allegheny County.
Maple Island Recreation Camp, Harmarville, Allegheny County.
Oakmont Motor and Boat Club, Picnic Grounds, Oakmont, Allegheny County.
Kilcare Camp, Recreation Camp, Cheswick, Allegheny County.
Pittsburgh Aquatic Club, Recreation Camp, Oakmont, Allegheny County.
Arcola Annex Recreation Camp, Oakmont, Allegheny County.
Annex Recreation Camp, Oakmont, Allegheny County.
Mendota Club, Oakmont, Allegheny County.
Lotus Club, Oakmont, Allegheny County.
Wind and Wave Club, Oakmont, Allegheny County.
Ecalux Club, Oakmont, Allegheny County.
Arcola Canoe Club, Oakmont, Allegheny County.
Idle-a-While Camp, Oakmont, Allegheny County.
The Marshall Camp, Oakmont, Allegheny County.
Oakmont Boat Club, Oakmont, Allegheny County.
Oakmont Motor Boat Club, Oakmont, Allegheny County.
Lenita Cottage, Oakmont, Allegheny County.
Bald Pate Camp, Oakmont, Allegheny County.
Camp Lucky, Oakmont, Allegheny County.
Revel Stoke Camp, Oakmont, Allegheny County.
University Club Recreation Camp, Oakmont, Allegheny County.
Whiggamore Club, Oakmont, Allegheny County.
Holmes Recreation Camp, Oakmont, Allegheny County.
Sevo Recreation Camp, Oakmont, Allegheny County.
Fault Club, Recreation Camp, Oakmont, Allegheny County.
Delmanor Recreation Camp, Oakmont, Allegheny County.
White Rock Recreation Camp, Oakmont, Allegheny County.
Hamilton Recreation Camp, Oakmont, Allegheny County.
B.OK-It-Oba Recreation Camp, Oakmont, Allegheny County.
Camp Salute Recreation Camp, Oakmont, Allegheny County.
Shaker Club, Recreation Camp, Oakmont, Allegheny County.
Unicor Canoe Club, Oakmont, Allegheny County.
Seven W's Recreation Camp, Oakmont, Allegheny County.
Black Cate Recreation Camp, Oakmont, Allegheny County.

George K. Bennor, Recreation Camp, Oakmont, Allegheny County.
Good Fellows Club, Recreation Camp, Oakmont, Allegheny County.
Odd Fellows Club, Recreation Camp, Oakmont, Allegheny County.
Mercury Club, Recreation Camp, Oakmont, Allegheny County.
William J. McKee Recreation Camp, Oakmont, Allegheny County.
Philatassean Club, Recreation Camp, Oakmont, Allegheny County.
Knot Canoe Club, Recreation Camp, Oakmont, Allegheny County.
Arapo Camp Club, Recreation Camp, Oakmont, Allegheny County.
M. McCarthy Recreation Camp, Oakmont, Allegheeny County.
Max Klever Recreation Camp, Oakmont, Allegheny County.
Dupont Recreation Camp, Oakmont, Allegheny County.
Riverhurst, Recreation Camp, Oakmont, Allegheny County.
Brau Dell Recreation Camp, Oakmont, Allegheny County.
Oakmont Boy Scouts Recreation Camp, Oakmont, Allegheny County.
Twa Twa Club, Oakmont, Allegheny County.
Ortrenu Club, Recreation Camp, Oakmont, Allegheny County.
Kau Shee, Recreation Camp, Oakmont, Allegheny County.
Villa Recreation Camp, Oakmont, Allegheny County.
Glen Eden Recreation Camp, Oakmont, Allegheny County.
Nah Cotta Recreation Camp, Cheswick, Allegheny County.
Silver Bar Recreation Camp, Oakmont, Allegheny County.
Svea Recreation Camp, Hulton, Allegheny County.
Camp Lee Recreation Camp, Oakmont, Allegheny County.
Rock Spring Recreation Camp, Oakmont, Allegheny County.
Oscola Recreation Camp, Oakmont, Allegheny County.
Blaizing Arrow Recreation Camp, Oakmont, Allegheny County.
Five Aces Recreation Camp, Oakmont, Allegheny County.
Ozark Recreation Camp, Oakmont, Allegheny County.
Chateau Recreation Camp, Oakmont, Allegheny County, No. 6.
Philadelphia Recreation Camp, Oakmont, Allegheny County.
Hi-CoO Muck-A-Marines, Recreation Camp, Cheswick, Allegheny County.
Colonial Club, Oakmont, Allegheny County.
No-Me Recreation Camp, Cheswick, Allegheny County.
Wonweech Recreation Camp, Cheswick, Allegheny County.
Camp Mullen Recreation Camp, Cheswick, Allegheny County.
Given Recreation Camp, Cheswick, Allegheny County.
Wanetta Recreation Camp, Cheswick, Allegheny County.
Lawrenceville Boat Club, Recreation Camp, Cheswick, Allegheny County.
Park Place Recreation Place, Oakmont, Allegheny County.
Three Nuts, Recreation Camp, Oakmont, Allegheny County.
Gem Recreation Camp, Oakmont, Allegheny County.
Brownie Recreation Camp, Oakmont, Allegheny County.
Midget Recreation Camp, Oakmont, Allegheny County.
Morris Recreation Camp, Oakmont, Allegheny County.
Val Halla Club, Recreation Camp, Oakmont, Allegheny County.
Little Pal Recreation Camp, Oakmont, Allegheny County.
Tho-A-Maha Recreation Camp, Oakmont, Allegheny County.
Emanon Club Recreation Camp, Oakmont, Allegheny County.
Locust Grove Recreation Camp, Oakmont, Allegheny County.
Alexis Recreation Camp, Oakmont, Allegheny County.
Siesta Recreation Camp, Oakmont, Allegheny County.
Camp Pat Recreation Camp, Oakmont, Allegheny County.
Pluvins Canoe Club, Recreation Camp, Oakmont, Allegheny County.
Camp Buncil, Oakmont, Allegheny County.
Camp Kesis, Recreation Camp, Oakmont, Allegheny County.
Camp Ussix, Oakmont, Allegheny County.
Camp Wolemsdor, Oakmont, Allegheny County.
The Square Recreation Camp, Oakmont, Allegheny County.
Norman Canoe Club, Camp, Oakmont, Allegheny County.
All Dutch Recreation Camp, Cheswick, Allegheny County.
High-There Recreation Camp, Cheswick, Allegheny County.
Orchard Club Recreation Camp, Logan Ferry, Allegheny County.
Tit-4-Tat Club, Recreation Camp, Cheswick, Allegheny County.
Swastika Club, Recreation Camp, Cheswick, Allegheny County.
Daisy Club Recreation Camp, Parnassus, Allegheny County.
Isleworth Club Recreation Camp, Natrona, Allegheny County.
Camp Jane Recreation Camp, Natrona, Allegheny County.
Elford Recreation Camp, Harmarville, Allegheny County.
We-Fel Recreation Camp, Harmarville, Allegheny County.
Wilkum Inn Recreation Camp, Harmarville, Allegheny County.
Half Way Inn Recreation Camp, Harmarville, Allegheny County.
Au Kum Inn Recreation Camp, Harmarville, Allegheny County.
Pitttsburgh Recreation Bureau Camp, Hoboken, Allegheny County.
Carson Recreation Camp, Harmarville, Allegheny County.
Kumango Recreation Camp, Hoboken, Allegheny County.
Bean Camping Club, House Boat Camp, Aspinwall, Allegheny County.
Gaubeamus Recreation Camp, Hoboken, Allegheny County.
Rainbow Recreation Camp, Springdale, Allegheny County.

All Moon Recreation Camp, Springdale, Allegheny County.
Hello Recreation Camp, Natrona, Allegheny County.
Camp Webb, Recreation Camp, Cheswick, Allegheny County.
Millvale, Recreation Camp, Cheswick, Allegheny County.
Ada-Do Recreation Camp, Harmarville, Allegheny County.
Dixie Canoe Club, Recreation Camp, Harmarville, Allegheny County.
Papalyn Canoe Club, Recreation Camp, Hoboken, Allegheny County.
Commobe Recreation Camp, Aspinwall, Allegheny County.

Besides the above-mentioned camps there were one hundred and thirty-five recreation camps inspected on the Allegheny River between Oakmont and Parnassus, the number of occupants ranging from two to one hundred people.

Lenape Park and Picnic Grove, Ford City, Armstrong County.
Morada Park and Picnic Grove, Beaver Falls, Beaver Camp.
Williams Picnic and Reunion Grounds, Everett, Bedford County.
Bethel Park Camp Meeting Grounds, Cessna, Bedford County.
Bittinger Picnic and Reunion Grounds, Imler, Bedford County.
Weaver Picnic and Reunion Grounds, Saxton, Bedford County.
Nycum Picnic Grove, Breeze Wood, Bedford County.
Grubb Picnic and Festival Grove, Clearville, Bedford County.
Kilcoin Picnic and Camp Meeting Grove, Bedford, Bedford County.
A. M. E. Congregation Camp Meeting Grove, Wolfsburg, Bedford County.
Carsonia Park and Picnic Grove, Esterly, Berks County.
Joanna Heights Camp Meeting Association Grounds, Joanna, Berks County.
Frederick Hartman Recreation Camp, Lenhartsville, Berks County.
Scott Rapp Recreation Camp, Virginville, Berks County.
James Haines Recreation Camp, Virginville, Berks County.
Charles Oakes Recreation Camp, Virginville, Berks County.
N. A. Confer Recreation Camp, Virginville, Berks County.
Luke Wagoner Recreation Camp, Virginville, Berks County.
William Bain Recreation Camp, Virginville, Berks County.
Charles Bingham Recreation Camp, Virginville, Berks County.
William Hintz Recreation Camp, Virginville, Berks County.
Kutztown Park Association Picnic Grove, Kutztown, Berks County.
Egelmans Grove Picnic Grounds, Reading, Berks County.
Donald E. Young Recreation Camp, Leesport, Berks County.
William Lockman Recreation Camp, Leesport, Berks County.
William Hovert Recreation Camp, Leesport, Berks County.
Harry Schmehl Recreation Camp, Leesport, Berks County.
James R. Wentz Recreation Camp, Leesport, Berks County.
Harry F. Gehrke Recreation Camp, Leesport, Berks County.
Elmer J. Eck Recreation Camp, Leesport, Berks County.
Lewis Harper Recreation Camp, Leesport, Berks County.
C. C. Leinbach Recreation Camp, Leesport, Berks County.
Howard Hart Recreation Camp, Leesport, Berks County.
John Borrell Recreation Camp, Leesport, Berks County.
Hon. James H. Maurer Recreation Camp, Leesport, Berks County.
Hellers Picnic Grove, Hyde Park, Berks County.
Mineral Springs Park, Reading, Berks County.
Mohnsville Camp Meeting Association Grove, Mohnton, Berks County.
H. Slanger Recreation Camp, Kutztown, Berks County.
Plow Union Picnic Grove, Geigers Mills, Berks County.
Yellow House Picnic Grove, Yellow House, Berks County.
High's Picnic Grove, Reading, Berks County.
Thomas H. Leinbach Recreation Camp, Leesport, Berks County.
Mohns New Picnic Grove, Mohnton, Berks County.
Lake Mont Recreation and Amusement Park, Altoona, Blair County.
Farmers Reunion Association Picnic Grove, Henrietta, Blair County.
Snyder's Picnic and Reunion Grove, Martinsburg, Blair County.
Stevens Recreation and Picnic Grove, Tyrone, Blair County.
Bland's Picnic Grove, Tipton, Blair County.
Roselawn Improvement Company's Recreation and Picnic Grove, Juniata, Blair County.
Hemlock Point Picnic Grounds, Canton, Bradford County.
Young Women's Christian Association Camp Grounds, Canton, Bradford County.
Inter-State Amusement Company's Park, Sayre, Bradford County.
Boy Scouts of America, Troop No. 32, Camp Grounds, Oakford, Bucks County.
Esters Willett Recreation Camp, Siles, Bucks County.
Philadelphia Branch Young Men's Christian Association, Recreation Camp, Smithtown, Bucks County.
Highland Park Camp Meeting Association, Sellersville, Bucks County.
Perkasie Park Association Camp Meeting Grounds, Perkasie, Bucks County.
Hulmeville Recreation Park, Hulmeville, Bucks County.
Menlow Park and Picnic Grounds, Perkasie, Bucks County.
Young Men's Christian Association Recreation Camp, Oakford, Bucks County.
Thomas Devlin Recreation Camp, Oakford, Bucks County.

Lutheran Camp Meeting Association Grounds, Oakford, Bucks County.
Simpson Grove Camp Meeting Association Camp Meeting Grounds, Trevose, Bucks County.
St. Martin's College Recreation Camp, Oakford, Bucks County.
Souder's Park and Picnic Grove, Quakertown, Bucks County.
Sparks and Evans Construction Company Camp, Bridgewater, Bucks County.
Solebury Deer Park, Picnic Grove, Aquetong, Bucks County.
Alemda Recreation Park, Butler, Butler County.
St. Francis Xavier Recreation and Amusement Grove, Cresson, Cambria County.
Johnstown City Park, Johnstown, Cambria County.
Johnstown City Park, Johnstown, Cambria County.
Roxbury Park Association, Recreation and Amusement Park, Johnstown, Cambria, County.
Arbutus Park Camp Meeting Association, Johnstown, Cambria County.
Victor E. Fith Picnic Grove, Johnstown, Cambria County.
Cambria Steel Company Picnic Grounds, Johnstown, Cambria County.
Berwind-White Coal Mining Company Picnic Grounds, South Fork, Cambria County.
Southern Cambria Railway Company Recreation and Picnic Grounds, Ebensburg, Cambria County.
Donald Kittel Picnic and Camp Grounds, Ebensburg, Cambria County.
Bell-Brockley-Ridpath Company Chatauqua Grounds, Ebensburg, Cambria County.
Holy Cross Congregation Recreation and Picnic Grounds, Spangler, Cambria County.
Barnesboro Recreation and Picnic Grounds, Barnesboro, Cambria County.
Northern Cambria Street Railway Company's Recreation and Amusement Park, Ebensburg, Cambria County.
St. Mary's Congregation Recreation and Picnic Grounds, Patton, Cambria County.
Pennsylvania Railroad Company Picnic and Recreation Grounds, Blandburg, Cambria County.
Gallitzin Fire Company Picnic Grounds, Gallitzin, Cambria County.
Independent Improved Order of Red Men Picnic Grounds, Portage, Cambria County.
Flag Staff Park, Mauch Chunk, Carbon County.
Hunters Park, Bellefonte, Centre County.
Hecla Park and Picnic Grounds, Mingoville, Centre County.
Philipsburg Athletic Park and Picnic Grove, Philipsburg, Centre County.
Lenape Park and Picnic Grove, Lenape, Chester County.
Philadelphia Camp Meeting and Excursion Association Grounds, Chester Heights, Chester County.
Childrens Country Week Association, Recreation Grounds, Downingtown, Chester County.
Coatesville Business Men's Association Picnic Grove, Coatesville, Chester County.
Gypsy Camp, Coatesville, Chester County.
Phoenixville, Valley Forge and Strafford Electric Railway Amusement Park, Phoenixville, Chester County.
Boy Scouts of Philadelphia Recreation Camp, Parker Ford, Chester County.
Devon Horse Show Association Grounds, Devon, Chester County.
H. M. Irwin's Picnic Grove, Curwensville, Clearfield County.
Firemens Park, Houtzdale, Clearfield County.
Clearfield Driving Park and Picnic Grounds, Clearfield, Clearfield County.
Edgmont Park and Picnic Grounds, DuBois, Clearfield County.
Mineral Spring Park and Picnic Grounds, Woodland, Clearfield County.
White Deer and Loganton Railway Company Park, Carroll, Clinton County.
Evangelical Association Camp Meeting Grounds, Loganton, Clinton County.
Farwell Park and Picnic Grounds, North Bend, Clinton County.
McElhatten Springs Park, McElhatten, Clinton County.
Pine Camp Meeting Grounds Association, Camp Meeting and Picnic Grove, Pine Station, Clinton County.
Whitenight Picnic Grove, Forks, Columbia County.
Grassmere Park, Picnic Grove, Jamison City, Columbia County.
Benton Park, Picnic Grove, Benton, Columbia County.
Fairchilds Picnic Grove and Park, Briar Creek, Columbia County.
Columbia, Montour and North Branch Transit Co.'s Park and Picnic Grove, Lime Ridge, Columbia County.
C. A. Kline's Picnic Grove, Blomsburg, Columbia County.
Perkins Park, Picnic Grove, Cambridge Springs, Crawford County.
Oakwood Park, Picnic Grounds and Dance Hall, Meadville, Crawford County.
Peniel Holiness Association Camp Meeting Grounds, Conneautville, Crawford County.
Hassett Club Recreation Camp, Boiling Springs, Cumberland County.
Mt. Holly Park, Picnic and Amusement Grove, Mt. Holly Springs, Cumberland County.
Great Grangers Inter-State Picnic and Exhibition Association Grounds, Williams Grove, Cumberland County.
Newville Park, Park and Dancing Pavillion, Newville, Cumberland County.
Summerdale Park, Picnic and Dancing, Enola, Cumberland County.

Bellaire Park, Picnic and Recreation Grounds, Carlisle, Cumberland County.
Boiling Springs Park, Picnic and Amusement Grounds, Boiling Springs, Cumberland County.
Fort Washington Park, Dancing Pavilllion, Lemoyne, Cumberland County.
Hogestown Horse and Cattle Show Grounds, Hogestown, Cumberland County.
Paxtang Park, Amusement and Picnic Grounds, Harrisburg, Dauphin County.
Hershey Park, Amusement and Picnic Grounds, Hershey, Dauphin County.
Reservoir Park Amusement and Picnic Grounds, Harrisburg, Dauphin County.
Wildwood Park, Amusement and Picnic Grounds, Harrisburg, Dauphin County.
Buffalo Park, Picnic Grounds, Halifax, Dauphin County.
Miller's Grove Picnic Grove, Halifax, Dauphin County.
Swagerts Grove, Picnic Grounds, Halifax, Dauphin County.
Enterline Picnic Grounds, Enterline, Dauphin County.
Boys Brigade of America, Company G, Fourth Regiment Camp, Hummelstown, Dauphin County.
Zion Lutheran Reformed Church, Sunday School Picnic Grounds, Klingerstown, Dauphin County.
Hoffman's Reformed Church, Picnic Grounds, Berrysburg, Dauphin County.
McCormick's Island, Public Play Grounds, Harrisburg, Dauphin County.
Stoverdale Camp Meeting Grounds, Hummelstown, Dauphin County.
Alricks Grove, Picnic Grounds, Paxton, Dauphin County.
Henninger Grove, Picnic Grounds, Berrysburg, Dauphin County.
Lykens Borough Park and Picnic Grounds, Lykens, Dauphin County.
Schuylkill and Dauphin Traction Co. Park and Picnic Grounds, Williamstown, Dauphin County.
Lykens Valley Association, Camp Meeting Grounds, Elizabethville, Dauphin County.
Lanker's Grove, Picnic Grounds, Elizabethville, Dauphin County.
Davids Reformed Church, Picnic Grounds, Berrysburg, Dauphin County.
Snyder's Grove, Picnic Grounds, Pillow, Dauphin County.
Harrisburg Academy Recreation Camp, Montgomerys Ferry, Dauphin County.
Y. M. C. A. Camp for Boys, Englenook, Dauphin County.
Bryn Mawr Horse Show Association Grounds, Bryn Mawr, Delaware County.
Boy Scouts, Troop No. 1, Recreation Camp, Media, Delaware County.
Boy Scouts of New Jersey, Recreation Camp, Media, Delaware County.
Spring Valley A. M. E. Church, Camp Meeting Grounds, Concordville, Delaware County.
Church of Nazarine Camp Meeting Grounds, Boothwyn, Delaware County.
Murphy's A. M. E. Church, Camp Meeting Grounds, Chester, Delaware County.
Elk Creek Park and Picnic Grove, North Girard, Erie County.
Waldameer Park, Amusement and Picnic Grounds, Waldameer Park, Erie County.
Elk Park, Picnic Grove and Amusement Park, North Girard, Erie County.
Four Mile Creek Park, Picnic Grove and Amusement Park, Erie, Erie County.
Shady Grove Park, Picnic Grounds, Percy, Fayette County.
First Presbyterian Church, Recreation and Picnic Grove, Champion, Fayette County.
Camp Mohawk, Boy Scouts Recreation Camp, Indian Head, Fayette County.
Killarney Park Association, Recreation Camp, Killarney Park, Fayette County.
East Liberty Y. M. C. A. Camp, Rogers Mills, Fayette County.
Rogers Grove, First Presbyterian Church Camp, Rogers Mills, Fayette County.
Fifteen small camps ranging from three to twenty members were inspected on the Indian Creek watershed in the vicinity of Rogers Mills, Champion and Indian Head, Fayette County.
Caledonia Park, Picnic Grounds, Fayetteville, Franklin County.
Red Bridge Park, Picnic Grounds and Amusemnt Park, Chambersburg, Franklin County.
Cold Spring Park, Picnic Ground and Amusement Park, Waynesboro, Franklin County.
United Congregation Camp Meeting Grounds, Fayetteville, Franklin County.
Daniel Hess Picnic Grove, Rouzerville, Franklin County.
United Brethren Camp Meeting Association Grounds, Kauffman, Franklin County.
Pleasant Grove Christian Church, Picnic Grounds, Needmore, Fulton County.
Clear Ridge Grove, Picnic Grounds, Clear Ridge, Fulton County.
J. S. Hoop and H. S. Daniels Picnic Grove, Harrisonville, Fulton County.
Emanuel Sipe Picnic Grove, Hustontown, Fulton County.
D. W. L. McKibben, Picnic Grove, Buck Valley, Fulton County.
Crystal Springs Camp Meeting Grounds, Crystal Springs, Fulton County.
Tuscarora Land Improvement Company Picnic Grounds, McConnellsburg, Fulton County.
James Henry Picnic Grounds, McConnellsburg, Fulton County.
Walnut Grove Camp Meeting Association Grounds, Maddenville, Huntingdon County.
McDonald's Grove, Picnic Ground, Neelytown, Huntingdon County.
J. K. Wiley Picnic Grounds, Neelytown, Huntingdon County.
United Bretheran Congregation's Camp Meeting Grounds, Three Springs, Huntingdon County.
A. M. E. Congregation's Camp Meeting Grounds, Three Springs, Huntingdon County.
George W. States, Picnic Grounds, Huntingdon, Huntingdon County.
Huntingdon Park and Road Association Grounds, Huntingdon, Huntingdon County.

W. B. Coleman Picnic Grounds, Smicksburg, Indiana County.
Idlewood Park, Picnic Grove, Lucerne Mines, Indiana County.
Island Grove, United Evangelical Camp Meeting Association Grounds, Mexico, Juniata County.
Leonard's Grove, Picnic Grounds, Waterloo, Juniata County.
Rocky Glen Park, Amusement and Picnic Grounds, Moosic, Lackawanna County.
St. Mary's Cathedral Cadets' Camp Grounds, Wimmers, Lackawanna County.
T. & J. Berk, Picnic and Amusement Park, Wimmers, Lackawanna County.
Nay Aug Park, Recreation and Picnic Grounds, Scranton, Lackawanna County.
Luna Park, Amusement Park, Scranton, Lackawanna County.
Central Manor Camp Meeting Association Grounds, Mountville, Lancaster County.
Gable's Park, Picnic Grove, Millersville, Lancaster County.
Kauffman's Park, Picnic Grove, Manheim, Lancaster County.
Christian Ministers' Alliance, Camp Meeting Grounds, Lancaster, Lancaster County.
Long's Park, Picnic Grounds, Lancaster, Lancaster County.
Williamson Park, Recreation and Picnic Grove, Lancaster, Lancaster County.
Peoples Amusement Company Park, Lancaster, Lancaster County.
Moravian Church Picnic Grove, Lititz, Lancaster County.
Hopeland Sunday School Association, Picnic Grove, Hopeland, Lancaster County.
Mt. Ayre Union, Picnic Grove, Hopeland, Lancaster County.
Ephrata Park Association, Ephrata, Lancaster County.
African Methodist Sunday School Picnic Grove, Rheems, Lancaster County.
Rawlinsville Camp Meeting Association Grounds, Rawlinsville, Lancaster County.
Landisville Camp Meeting Association Grounds, Landisville, Lancaster County.
Cascade Park, Amusement Park, New Castle, Lawrence County.
Kreider's Grove, Camp Meeting and Picnic Grounds, Lebanon, Lebanon County.
David Light Picnic Grove, Heilmandale, Lebanon, Lebanon County.
United Brethren Camp Meeting Association Ground, Mt. Gretna, Lebanon County.
St. Luke's Choir Camp Grounds, Mt. Gretna, Lebanon County.
Mt. Lebanon Camp Meeting Association Grounds, Lebanon, Lebanon County.
Pen Ryn Park, Picnic Grounds, Cornwall, Lebanon County.
U. B. Camp Meeting Association Grounds, Lebanon, Lebanon County.
Reyer's Camp Grounds, Newmanstown, Lebanon County.
Seiber's Grove, Camp Meeting Grounds, Sheridan, Lebanon County.
Schaefferstown Picnic Grove, Schaefferstown, Lebanon County.
Young Men's Christian Association of Camden, N. J., Recreation Camp, Lotell, Lebanon County.
Evangelical Association Camp Meeting Grounds, Corning, Lehigh County.
Fountain Park Play Grounds, Allentown, Lehigh County.
Emanuel Grove Camp Meeting Association Grounds, Wescosville, Lehigh County.
Mizpah Grove, Mennonite Brethren in Christ Camp Meeting Grounds, Allentown, Lehigh County.
Dorney Park, Amusement Park and Picnic Grounds, Wescosville, Lehigh County.
Allentown City Park, Allentown, Lehigh County
River Front Park, City Play Grounds, Allentown, Lehigh County.
United Evangelical Waldheim Association Camp Meeting Grounds and Picnic Grove, Salisbury, Lehigh County.
Central Park Amusement Company, Amusement Park, Allentown, Lehigh County.
Free Methodist Church Camp Meeting Grounds, Dallas, Luzerne County.
Camp Der Bois, Recreation Camp, Shawaneese, Luzerne County.
C. W. Robbins Recreation Camp, Wapwallopen, Luzerne County.
Valley View Park, Recreation and Picnic Grounds, Pittston, Luzerne County.
Sans Souci Park, Amusement and Picnic Grounds, Nanticoke, Luzerne County.
Evergreen Park, Picnic Grounds, St. Johns, Luzerne County.
Wilkes-Barre Railway Company Picnic Grounds, Dallas, Luzerne County.
Sylvan Dell Park Association, Amusement and Recreation Park, Williamsport, Lycoming County.
Williamsport Passenger Railway Company, Amusement and Picnic Park, Williamsport, Lycoming County.
Muncy Valley Camp Meeting Association Grounds, Hughesville, Lycoming County.
Crystal Park, Picnic Grove, James City, McKean County.
Free Methodist Church Picnic Grove and Camp Meeting Grounds, Bradford, McKean County.
Goodyear Lumber Company Bark Peelers Camp, Colegrove, McKean County.
Hartman's Grove, Picnic and Boy Scout Camp Grounds, Milroy, Mifflin County.
Burnham Park, Amusement and Picnic Grounds, Burnham, Mifflin County.
Gibboney Park, Amusement and Picnic Grounds, Belleville, Mifflin County.
Riverside Park, Picnic Grounds, Lewistown, Mifflin County.
Saylor Lake Park, Picnic Grove, Saylorsburg, Monroe County.
Camp of Instruction for United States Troops and State Militia, Tobyhanna, Monroe County.
T. L. Eyre Construction Camp, West Manayunk, Montgomery County.
Willow Grove Amusement Park and Picnic Grounds, Willow Grove, Montgomery County.
N. D. Seipt, Picnic and Recreation Camp Grounds, Schwenkville, Montgomery County.

Sanatoga Park, Picnic Grounds, Sanatoga, Montgomery County.
William Swartley Picnic Grove, Norristown, Montgomery County.
Young Men's Christian Association of the University of Pennsylvania, Camp, Green Lane, Montgomery County.
West Branch of Y. M. C. A. Camp, Oaks, Montgomery County.
Childrens Country Week Association of Philadelphia, Camp, Spring House, Montgomery County.
Norristown Episcopal Church Choir Camp, Schwenkville, Montgomery County.
Philadelphia Young Women's Christian Association, Outing Home for Girls, Penllyn, Montgomery County.

Twenty-three small camps, ranging from two to fifty members, were inspected on the watersheds of the Schuylkill River and the Perkiomen Creek in the vicinity of Collegeville, Green Lane, Valley Forge, Oaks and Graterford, in Montgomery County.
Billmeyer Park (for Propagation of Elk), Washingtonville, Montour County.

Graham Grove, Picnic and Reunion Grounds, Strawberry Ridge, Montour County.
Eckman Grove, Picnic Grounds, Howellville, Montour County.
Paules Picnic Grove, Danville, Montour County.
Oakland Park, Picnic Grounds, Dryland, Northampton County.
Island Park, Amusement and Picnic Park, Easton, Northampton County.
Watsontown Borough Park, Watsontown, Northumberland County.
Riverside Park, Picnic and Amusement Grounds, Watsontown, Northumberland County.
Shamokin and Mt. Carmel Transit Company, Amusement Park, Ranshaw, Northumberland County.
Herndon Camp Meeting Association Grounds, Herndon, Northumberland County.
Shamokin and Edgewood Electric Railway Amusement Park, Shamokin, Northumberland County.
Edgewood Park, Amusement and Picnic Park, Shamokin, Northumberland County.
DeWitt's Park, Amusement and Picnic Grounds, Riverside, Northumberland County.
Groff's Grove, Picnic Grounds, New Bloomfield, Perry County.
Gottshall's Grove, Picnic Grounds, Blain, Perry County.
Campfire Girls, Recreation Girls, Tafton, Pike County.
Brooklyn Y. M. C. A. Camp Grounds, Tafton, Pike County.
Boy's Athletic and Instruction Camp Grounds, Milford, Pike County.
Cascade Camp, Recreation Camp, Milford, Pike County.
Swetland's Picnic Grove, Mills, Potter County.
Nichols Picnic Grove, Shinglehouse, Potter County.
Smith's Picnic Grove, Burtville, Potter County.
Tumbling Run Park, Amusement and Picnic Grounds, Pottsville, Schuylkill County.
Mahanoy City Play Grounds and Picnic Grove, Mahanoy City, Schuylkill County.
Woodland Park, Amusement and Picnic Grove, Ashland, Schuylkill County.
Mahanoy City Baseball Park and Picnic Grounds, Mahanoy City, Schuylkill County.
Coney Island Park, Amusement and Picnic Grounds, Ashland, Schuylkill County.
Gordan Recreation and Picnic Graunds, Gordon, Schuylkill County.
Boyd's Picnic Grounds, Lavelle, Schuylkill County.
Church of God Picnic Grounds, Hegins, Schuylkill County.
Lavelle Picnic Grounds, Lavelle, Schuylkill County.
Toney Cupfungei Picnic Grounds, Lavelle, Schuylkill County.
Klinger's Grove, Picnic Grounds, Hegins, Schuylkill County.
Keffer's Grove, Picnic Grounds, Tower City, Schuylkill County.
Lake Side Park, Picnic Grounds, Barnesville, Schuylkill County.
Jones Grove, Picnic Grounds, Ringtown, Schuylkill County.
Stauffer's Grove, Picnic Grounds, Ringtown, Schuylkill County.
Bidding's Grove, Picnic Grounds, Ringtown, Schuylkill County.
Washington Fire Company's Amusements and Picnic Grounds, Ashland, Schuylkill County.
Kimmels Church Picnic Grounds, Hegins, Schuylkill County.
Klinger's Grove, Picnic Grounds, Fearnot, Schuylkill County.
Welker's Grove, Picnic Grounds, Spring Glen, Schuylkill County.
Valley View Park and Picnic Grounds, Valley View, Schuylkill County.
United Brethreran Church Camp and Picnic Grounds, Valley View, Schuylkill County.
Baum's Picnic Grounds, Klingerstown, Schuylkill County.
Keifer's Picnic and Recreation Grounds, Joliet, Schuylkill County.
Orwin Park Association Picnic Grounds, Orwin, Schuylkill County.
Hegins Athletic Association Picnic Grounds, Hegins, Schuylkill County.
Lutheran Reformed Church, Picnic Grounds, Hegins, Schuylkill County.
Cold Spring Grove Association, Picnic Grove, McClure, Snyder County.
Rolling Green Park, Picnic Grounds, Shamokin Dam, Snyder County.
Elk Lick Chautauqua Association Grounds, Elk Lick, Somerset County.

Pennsylvania and Maryland Street Railway Company Picnic Grove, Somerset, Somerset County.
Berwind-White Coal Mining Company Recreation Park and Picnic Grove, Windber, Somerset County.
University of Pittsburgh Athletic Association, Training Camp, Windber, Somerset County.
Island Park, Picnic Grounds, Conemaugh Township, Somerset County.
Eaglesmere Park, Summer Resort and Picnic Grounds, Eaglesmere, Sullivan County.
Cronin's Picnic Grounds, Dushore, Sullivan County.
Lake Mokoma Company, Park and Picnic Grounds, Laporte, Sullivan County.
Camp Susquehannock, Recreation Camp, Lawsville Center, Susquehanna County.
Camp Red Cloud, Recreation Camp, Silver Lake, Susquehanna County.
Camp Choconut Recreation Camp, Friendsville, Susquehanna County.
Wyalusing District Camp Meeting Association Grounds, Dimock, Susquehanna County.
Island Park, Ball Park and Picnic Grove, Blossburg, Tioga County.
Woodland Park, Picnic Grounds, Wellsboro, Tioga County.
West Fall Camp Grounds, Recreation Camp, Gleniron, Union County.
Camp Thomas, Recreation Camp, Gleniron, Union County.
Wolfeland Grove, Picnic and Camp Meeting Grounds, Lewisburg, Union County.
Central Oakes Heights Camp Meeting Association Grounds, West Milton, Union County.
Hasson Park and Picnic Grove, Oil City, Venango County.
Monarch Park, Amusement Park and Picnic Grove, Oil City, Venango County.
Free Methodist Camp Meeting Association Grounds, Pleasantville, Venango County.
Emlenton Park and Picnic Grove, Emlenton, Venango County.
Saints of God Camp Meeting Association Grounds, Ellenton, Venango County.
Allegheny Springs Camp (Summer Cottages), Irvine, Warren County.
Bellview Assembly Association, Camp Meeting Grounds, Independence, Washington County.
Bentleyville Holiness Camp Meeting Association Ground, Bentleyville, Washington County.
Dood's Grove, Recreation Camp, Baker Station, Washington County.
Washington Borough, Park and Picnic Grounds, Washington, Washington County.
Eldora Amusement Park and Picnic Grove, Charleroi, Washington County.
Lake Ladore Improvement Company, Picnic Grounds, Waymart, Wayne County.
Shear Club, Recreation Camp, Braeburn, Westmoreland County.
Holden Club Recreation Camp, Braeburn, Westmoreland County.
Camp Thompson, Recreation Camp, Braeburn, Westmoreland County.
Camp McCall, Recreation Camp, Braeburn, Westmoreland County.
Belvidere Club, Recreation Camp, Braeburn, Westmoreland County.
Ridgeview Park Association, Camp Meeting Grounds, Millwood, Westmoreland County.
Camp Indiana Recreation Camp, Ligonier, Westmoreland County.
Nemarlan Club, Recreation Camp, Ligonier, Westmoreland County.
Independent Club, Recreation Camp, Ligonier, Westmoreland County.
Idlewild Park, Picnic Grove, Ligonier, Westmoreland County.
Allegheny Valley Camp Meeting Association Grounds, Arnold, Westmoreland County.
Westmoreland Amusement Park, Irwin, Westmoreland County.
Oakford Park, Amusement Park and Picnic Grove, Jeanette, Westmoreland County.
Bell Bockel Company, Inc., Construction Camp, Allegheny Township, Westmoreland County.
Camp Pokakonut Recreation Camp, Lake Cary, Wyoming County.
Lake Winola Park Company, Amusement Park and Picnic Grounds, Lake Winola, Wyoming County.
Hokes Grove Camp Meeting Association Ground, Hokes, York County.
Wild Cat Falls, Recreation Grounds, Wrightsville, York County.
Acocomac Recreation Camp, Cottages and Dance Pavilions, Wrightsville, York County.
Highland Park, Amusement and Recreation Grounds, York, York County.
Brookside Park, Picnic Grounds, Dover, York County.
Cold Springs Park, Picnic Grounds, Manchester, York County.
Mt. Olivet Union Camp Meeting Association Grounds, Dillsburg, York County.
Penn Grove Assembly Ground, Smith Station, York County.
Summit Grove Camp Meeting Association Ground, New Freedom, York County.
Eichelbergers Park, Amusement and Picnic Grounds, Hanover, York County.
Boy Scouts of America (from Philadelphia), Recreation Camp, Warman's Island, Post office Erwinna, Hunterdon County, N. J.

COUNTY FAIR GROUNDS INSPECTED IN 1915.

Biglerville Agricultural, Horticultural and Poultry Association, Biglerville, Adams County.
Fruit Growers Associaion of Adams County, Bendersville, Adams County.
Allegheny County Agricultural Association, Imperial, Allegheny County.
Dayton Agricultural and Mechanical Association, Dayton, Armstrong County.
Kiskiminetas Valley Agricultural and Driving Association, Apollo, Armstrong County.
Kittaning Fair Association, Kittaning, Armstrong County.
Beaver County Agricultural Association, Junction Park, Beaver County.
Bedford County Agricultural Society, Bedford, Bedford County.
Grangers Picnic Association, Osterburg, Bedford County.
Kutztown Fair Association, Kutztown, Berks County.
Berks County Agricultural and Horticultural Association, Reading, Berks County.
Reading Fair Company, Reading, Berks County.
Blair County Grange Fair Association, Hollidaysburg, Blair County.
Bradford County Agricultural Society, Towanda, Bradford County.
Troy Agricultural Society, Troy, Bradford County.
Wyalusing Fair Association, Wyalusing, Bradford County.
Inter-State Fair Association, Athens, Bradford County.
Bucks County Agricultural Society, Perkasie, Bucks County.
Farmers Picnic Association of Quakertown, Quakertown, Bucks County.
Butler Driving Park and Fair Association, Butler, Butler County.
Chicora Driving Park and Fair Association, Chicora, Butler County.
Cambria County Agricultural Association, Carrolltown, Cambria County.
Ebensburg Agricultural Association, Ebensburg, Cambria County.
Cameron County Agricultural Association, Emporium, Cameron County.
Carbon County Industrial Society, Lehighton, Carbon County.
Patrons of Husbandry Encampment and Fair Association, Centre Hall, Centre County.
Bellefonte Fair Association, Bellefonte, Centre County.
Chester County Agricultural Association, West Chester, Chester County.
Oxford Agricultural Association, Oxford, Chester County.
Clarion County Fair Association, Clarion, Clarion County.
Clearfield County Agricultural Society, Clearfield, Clearfield County.
DuBois Driving and Agricultural Association, DuBois, Clearfield County.
Columbia County Agricultural Association, Bloomsburg, Columbia County.
Conneaut Lake Agricultural Association, Exposition Park, Crawford County.
Oil Creek Agriculaural Fair Association, Titusville, Crawford County.
Agricultural Society of Cumberland County, Carlisle, Cumberland County.
Grangers Inter-State Picnic Exposition Association, Williams Grove, Cumberland County.
Middletown Fair Association, Middletown, Dauphin County.
Gratz Agricultural and Horticultural Association, Gratz, Dauphin County.
Delaware Agricultural Society, Media, Delaware County.
Elk County Agricultural Fair Association, St. Marys, Elk County.
Wattsburg Agricultural Society, Wattsburg, Erie County.
Corry Fair and Driving Park Association, Corry, Erie County.
Fayette County Fair, Dawson, Fayette County.
Greene County Agricultural and Manufacturing Society, Carmichaels, Greene County.
Waynesburg Fair and Agricultural Association, Waynesburg, Greene County.
Richhill Agricultural Association, Jacktown, Greene County.
Indiana County Agricultural Society, Indiana, Indiana County.
Jefferson County Agricultural and Driving Association, Brookville, Jefferson County.
Punxsutawney Fair Association, Punxsutawney, Jefferson County.
Juniata County Agricultural Society, Port Royal, Juniata County.
Lackawanna County Fair and Grange, Clarks Summit, Lackawanna County.
Lancaster County Agricultural Fair Association, Lancaster, Lancaster County.
Lawrence County Agricultural Association, Pulaski, Lawrence County.
Lebanon Valley Fair Association, Lebanon, Lebanon County.
Lehigh County Agricultural Society, Allentown, Lehigh County.
Dallas Fair Association, Dallas, Luzerne County.
Lycoming County Fair Association, Hughesville, Lycoming County.
McKean County Fair Association, Smethport, McKean County.
Mercer County Agricultural Association, Stoneboro, Mercer County.
Mercer Central Agricultural Society, Mercer, Mercer County.
Monroe County Agricultural Society, Stroudsburg, Monroe County.
Montgomery Fair Association, Pottstown, Montgomery County.
Northampton County Agricultural Society, Nazareth, Northampton County.

Milton Fair and Northumberland County Agricultural Association, Milton, Northumberland County.
Perry County Agricultural Society, Newport, Perry County.
Somerset County Agricultural Society, Somerset, Somerset County.
Meyersdale Fair Association, Meyersdale, Somerset County.
Sullivan County Agricultural Society, Forksville, Sullivan County.
Susquehanna County Agricultural Society, Montrose, Susquehanna County.
Lawton Agricultural Society, Lawton, Susquehanna County.
Harford Agricultural Society, Harford, Susquehanna County.
Cowanesque Valley Agricultural Society, Westfield, Tioga County.
Smythe Park Association, Mansfield, Tioga County.
Union County Agricultural Society, Lewisburg, Union County.
Warren County Agricultural Association, Warren, Warren County.
Washington Fair Association, Arden, Washington County.
Sandy Plains Fair Association, Millsboro, Washington County.
West Alexander Agricultural Association, West Alexander, Washington County.
Burgettstown Union Agricultural Association, South Burgettstown, Washington County.
Wayne County Agricultural Society, Honesdale, Wayne County.
Westmoreland County Fair Association, Youngwood, Westmoreland County.
Ligonier Valley Farmers Fair Association, Ligonier, Westmoreland County.
Wyoming County Fair Association, Tunkhannock, Wyoming County.
York County Agricultural Society, York, York County.
Hanover Agricultural Society, Hanover, York County.
New Freedom Farmers Improvement Association, New Freedom, York County.
Pen Mar Agricultural Association, Fawn Grove, York County.
Stewartstown Agricultural Association, Stewartstown, York County.
Red Lion Agricultural Fair Association, Red Lion, York County.

V. EPIDEMICS.

During the year 1915 officers of the Engineering Division, under the direction of the Chief Engineer, undertook investigations and the institution of remedial measures relative to outbreaks of disease in thirty-three cases, in thirty-two of which epidemics had already developed when the circumstances first came to the Department's attention, while in one instance the outbreak was merely threatened and was avoided by prompt action. Thirty-two of the investigations were relative to typhoid fever and one was relative to dysentery. In those instances in which officers of the Division of Medical Inspection were in charge the work of the Engineering Division was limited practically to investigations and operations relative to water works and sewerage. In other instances the officers of the Engineering Division were in responsible charge. The following is a list of the places involved:

1. Abington and Cheltenham Townships and Jenkintown, Montgomery County.
2. Allentown.
3. Altoona.
4. Arnold, New Kensington and Parnassus.
5. Bristol.
6. Canonsburg.
7. Chambersburg.
8. Coatesville (threatened outbreak).
9. Danville.

10. Danville (State Hospital for the Insane).
11. Everett.
12. Everson (dysentery).
13. Gallitzin.
14. Hamburg.
15. Jeannette and vicinity.
16. Johnsonburg.
17. Johnstown.
18. Kutztown.
19. Lewistown.
20. Litiitz.
21. Newport.
22. Oakmont and Verona.
23. Philadelphia.
24. Pittston.
25. Pottsville, St. Clair and Port Carbon.
26. Renovo.
27. Saltillo.
28. Scalp Level.
29. Shippensburg.
30. Swissvale.
31. Trauger Village, Mt. Pleasant Township, Westmoreland County.
32. Villa Maria Academy, East Whiteland Township, Chester County.
33. York.

Reports of the investigations and activities of the Engineering Division are given in the following pages, except for the investigations, Nos. 1, 9, 10, 21 and 29, which are printed as joint reports of the Medical Division and the Engineering Division in the early part of this report.

TYPHOID FEVER OUTBREAK IN THE CITY OF ALLENTOWN.

On August 17, 1915, it was brought to the attention of the Department of Health than an outbreak of typhoid fever had appeared in the City of Allentown. Seventy-two cases from July 5th to September 10th, inclusive, were ultimately reported and investigated. The undersigned assistant engineer, aided by Inspectors Joseph M. Hellings and J. H. Stewart, proceeded to the city under your orders to investigate and report the existing conditions and take such remedial steps as might be determined upon. The investigation occupied from August 17th to September 20th, inclusive.

General Conditions.

The City of Allentown, having an estimated population of 61,000, is the county seat of Lehigh County. It is located in the north central part of the county. The greater part of the city lies west of the Lehigh River and on rising ground. Jordan Creek flows through the eastern portion of the city, dividing the first and sixth wards from the rest of the town, and enters the Lehigh River in the Southwestern portion of the city. One thousand feet above its mouth the Little Lehigh Creek enters Jordan Creek from the wast. In recent years a built-up community east of the Lehigh River has been added to the city. The land along Jordan Creek and the Little Lehigh Creek is low and subject to inundation. It is thickly built upon, is traversed by the railroads, and accommodates many industrial plants.

There are fourteen wards in the city. Wards 1 and 6, as stated above, lie between Jordan Creek and the Lehigh River. They are small in area and thickly settled. Wards 2, 9 and 10 lie just west of Jordon Creek. The remaining wards lie west of this and on the plateau on which the greater part of the city is built.

Sewerage.

The city is without a public system of sewers. The sewage for the most part is disposed of into cesspools or so-called "sink holes," constructed in limestone formation which underlies practically the entire vicinity. In the higher portions of the city the cesspools give reasonably satisfactory results. In the lower districts, notably in the 1st, 6th and 2nd wards, where the water table is close to the surface, considerable trouble is experienced with overflowing. Once yearly the city health officers make a sanitary survey of the city and issue orders against all unsatisfactory prop-

erties. In the year just passed about 900 cesspools were ordered cleaned. Sewage reaches State waters through private sewers discharging into Jordan Creek and also through the medium of some of the storm sewers. In the 1st, 2nd, 6th and 14th wards the kitchen wastes and wash water are frequently discharged onto the ground surface and into street gutters.

Comprehensive plans for a sanitary sewerage system and sewage treatment works have been approved by the Department, but necessary funds for their construction have not been voted by the electors.

A considerable quantity of night-soil from the city is deposited on the ground surface near the upper end of Kline's Island in the city limits and in the 1st ward. It is reported that the island is at times inundated.

The city maintains a municipal reduction plant to which the garbage is brought. It is of insufficient capacity to effect complete destruction of all the wastes collected in the city. As a result a partially dried garbage obtains and is an excellent breeding place for flies and causes an unbearable stench in the vicinity.

Water Works.

The water works is owned and operated by the city. Water is obtained from Crystal Spring and from Shantz Spring. Crystal Spring constituted the original supply and is in the city limits. Shantz Spring is about five miles southwest of the city in Upper Macungie Township. The water from Shantz Spring is conveyed by gravity into a receiving standpipe at the pumping station at Crystal Spring. Provision is also made to divert this water into the basin of Crystal Spring. Large pumping units with suction mains terminating in Crystal Spring basin or in the receiving standpipe deliver water into the distributing system on which are located two equalizing standpipes. Crystal Spring issues from a limestone formation and is on the banks of Little Lehigh Creek. It is at the base of a steep slope. The drainage area tributary to this spring comprises about one square mile within the city limits, thickly settled, having an estimated population of 3,000. Numerous cesspools have been built in this area and are about 130 feet above the spring. Normally the water surface in the spring is somewhat lower than the surface of the water in Little Lehigh Creek. The spring basin is formed by a concrete wall 14 feet high extending from limestone rock to a point above the surface of the ground. It has a storage capacity of 1,200,000 gallons, about two-thirds of which is available. There have been times when the Little Lehigh Creek has attained a flow sufficiently high to overflow the walls of the spring basin. An overflow pipe extending from the basin to the creek is normally left open. There have been times when the valve on this overflow pipe has not been closed until after flood waters from the creek had entered the basin.

Shantz Spring constitutes the principal source of supply for the city. The area tributary to the spring is not more than 3 square miles in extent and comprises a rolling area largely under cultivation, on which an estimated population of 300 people live. The water issues from a large limestone cavern of undermined depth. A basin has been constructed here with concrete walls extending above the ground surface. The basin has a storage capacity of about 2,700,000 gallons, of which 2,000,000 are available.

The section of the city lying east of the Lehigh River comprising the 14th ward, prior to its annexation, was supplied with water by the Bethlehem City Water Company, furnishing a filtered supply of Lehigh River water. Since October 4, 1914, the city has been furnishing this ward with water through the 12-inch main extending from the city's distributing system.

A temporary hypochlorite of lime disinfecting apparatus is installed at the old pumping station. It consists of a mixing barrel, 2 solution barrels and a constant head orifice box. Prior to July 26, 1915, the Shantz Spring supply received no chemical treatment other than that obtained through its mixture with the Crystal Spring water. This temporary apparatus was sanctioned in a letter dated October 14, 1912.

In a permit issued April 28, 1915, the Department approved 2 sets of apparatus for the treatment of the water with chlorine gas. These apparatus were installed and put into service July 26th, and operated continuously until August 3rd, when the Shantz Spring apparatus was put out of service by the breaking of a pressure valve. On August 14th repairs were made and the application of the germicide resumed. During the night Shantz Spring water was the only supply used and at such times it received no treatment whatsoever. During the day both supplies were used and the water from Shantz Spring no doubt received some degree of purification by its admixture with the chemically treated Crystal Spring supply. From August 14th on the treatment of both supplies continued uninterruptedly.

Typhoid Fever.

The records of typhoid fever and deaths resulting therefrom obtained from the city officials and covering a period of 10 years appear in the following table:

Year.	Cases.	Deaths.	Year.	Cases.	Deaths.
1905,	139	15	1910,	110	14
1906,	103	19	1911,	226	23
1907,	144	23	1912,	164	15
1908,	86	10	1913,	122	10
1909,	151	23	1914,	95	13

From the records it appears that there was never a month in the 10-year period when typhoid fever was not prevalent in the city, and with few exceptions the greater number of cases occurred during the late summer and early fall.

During August, September and October there were:

57 cases in 1914
67 cases in 1913
98 cases in 1912
100 cases in 1911
48 cases in 1910
80 cases in 1909

TYPHOID FEVER IN 1915.

The data relative to the 72 cases of typhoid fever investigated by the Department's officers are the basis of the following tables:

Day.	Onsets.			Day.	Onsets.		
	July.	Aug.	Sept.		July.	Aug.	Sept.
1,		1	4	18,		2	
2,			3	19,			
3,		6	1	20,		3	
4,		4	3	21,		1	
5,	1	1		22,		1	
6,		2	1	23,		1	
7,		2		24,	1	2	
8,		2		25,	1	2	
9,		2	1	26,	1	2	
10,	1	1	2	27,			
11,	1	2		28,			
12,		1		29,	1	1	
13,				30,	1	4	
14,		1		31,		1	
15,		3					
16,		1		Total,	8	49	15
17,							

AGE AND SEX DISTRIBUTION.

Age	Male.	Female.	Total.	Age.	Male.	Female.	Total.
0- 4,	3	3	6	35-39,	2	5	7
5-10,	7	4	11	40-44,	5	1	6
10-14,	5	6	11	45-49,	2	0	2
15-19,	2	5	7	50-+,	1	1	2
20-24,	4	4	8				
25-29,	7	2	9		39	33	72
30-34,	1	2	3				

OCCUPATION.

	Occupation.			Occupation.	
	Male.	Female.		Male.	Female.
Bethlehem Steel Co.,	6	----	Domestic,	----	1
Reading Ry.,	1	----	Conductor,	1	----
Allentown Silk Co.,	2	1	Machinist,	1	----
Merchant,	1	----	Alpha Silk Co.,	1	----
At home,	4	9	Soldier,	1	----
Easton,	1	----	Repairman,	1	----
Carpenter,	2	----	Wire mill,	1	----
Housewife,	----	11	Queen Silk Co.,	----	1
School,	11	7	Pioneer Silk Co.,	----	1
Cigar maker,	----	2	Laborer,	1	----
Butcher,	1	----	Garage,	1	----
Building inspector,	1	----		39	33
Fullerton Axle Co.,	1	----			

Distribution of Cases by Wards.

Ward.	Population.	Cases.	Ward.	Population.	Cases.
1,	4,245	17	9,	4,282	1
2,	3,768	10	10,	8,418	7
3,	4,016	2	11,	6,315	4
4,	2,721	0	12,	1,924	1
5,	2,381	3	13,	3,026	1
6,	4,162	10	14,	2,044	4
7,	4,095	1			
8,	9,633	11	Total,	61,030	72

WATER SUPPLY.

Public,	72
Public and private,	30

MILK SUPPLY.

Dealer.	No. of Cases.
Wolfe,	3
Kline and Richards,	1
O. Miller,	3
Tonay,	2
Bieber,	1
Heinbach,	2
Zotter,	4
Brenner,	1
Dewald,	2
Stuber,	1
Reeser,	5
Frederick Bros.,	1
Lucien and various,	1
Reichard,	1
Condensed,	1
Hemminger,	5
Reeser, O. Miller and various,	1
McGeever and Maurer,	1
Diehl,	1
Reeser and O. Miller,	5
Kline,	1
Reeser, O. Miller and Nauroth,	1
Decking,	3
Rausch,	2
Roth,	7
Beltz and own cow,	2
O. Miller and Zanata,	6
Zautner,	1
Decking and Zotter,	1
Albright,	1
Michel and Wenner,	1
Own cow,	1
Laub,	1
Sherman,	1
	72

Uncooked vegetables, raw shell-fish, ice and ice cream were all excluded as not probable causes in the transmission of the infection. In only 36 instances was ice cream used, and it was obtained from 16 different dealers. In about 7 per cent. of the cases the infection may have arisen from contact with other cases in the household or with other cases existing at places visited.

From the records of examination made by the city bacteriologist, it appears that bacteria of the colon group were present in tap samples frequently during the period from August, 1914, to July 26, 1915. Prior to July 26, 1915, the Shantz supply received no purification whatsoever, and again during the period of August 3rd to 14th, when the apparatus at Shants Spring was out of service, it received no treatment. The presence of B. coli in Shantz Spring water and a high total count usually followed a few days after a heavy precipitation. B. coli were found in tap samples on August 2nd and on August 3rd.

During the time when the germicide apparatus at Shantz Spring was out of service a heavy rain caused the Little Lehigh Creek to rise suddenly and its waters backed into the Crystal Spring basin through the overflow pipe, the valve on the line having been left open. The exact length of time that this condition prevailed is not known, but it may have been for an hour or more. During the period from August 3rd to 14th, inclusive, B. coli were present in tap samples on at least 3 occasions.

Close observation of the chemical treatment apparatus indicated that the equipment worked satisfactorily. On one occasion however, it was observed that the apparatus had not received proper attention, since the valve on the spare gas tank was tightly shut, and when the tank in operation became empty the waters of Shantz Spring were not treated because of this closed valve.

Discussion.

Prominent among the things which the investigation disclosed were the following:

1. All of the cases used the public water supply and less than 42 per cent. used other water in addition to the city supply.
2. Cases were found in every ward of the city with the exception of the 4th.
3. Fifty-one per cent. of the cases occurred in the 1st, 2nd and 6th wards and nearly 38 per cent. in the 1st and 6th wards. These two wards occupy the low district lying between the Lehigh River and Jordan Creek.

4. Only 15 per cent. of the cases resided in the 8th ward, which has not only the largest population of any one ward but exceeds both the 1st and 6th wards combined. It occupies an extensive area on high land and the general sanitary conditions are much better in this ward than in most of the others.

5. Nearly 53 per cent. of the cases occurred among school children and those classified as "stay-at-homes" or those engaged in household duties. The others were employed at various industries. The greatest number employed at any one establishment, the Bethlehem Steel Company, did not exceed six, this being only 8 per cent. of the total. Milk was obtained from 38 different distributors. The greatest number obtaining a supply from any one source was 16. Only about 29 per cent. of the patients were out of the city within the proper incubation period.

Typhoid fever in Allentown is evidently endemic and its prevalence may be attributed to numerous causes, especially lack of proper sewerage facilities with consequent insanitary conditions and contaminated water and the prevalence of flies due to the improper disposal of garbage and manure.

Judging from the facts that B. coli were found in tap samples of the public water supply at a number of times; that part of the supply is obtained from a limestone formation underlying a portion of the city into which many cesspools have been opened; and that the city has not been free of typhoid fever for a long period of years, it seems reasonable to assume that the water must have played some part in the transmission of the infection. General bad sanitary conditions in certain sections of the city no doubt contributed to the number of cases which developed.

Remedial Measures.

In order to provide for emergencies it was ordered that emergency disinfecting apparatus should be provided for each supply as follows:

"September 19, 1915.

"Charles D. Weirbach,
"City Engineer,
"Allentown, Pa.

"Arrangements must be made immediately for emergency disinfecting apparatus at both Crystal and Shantz sprinigs for use in case regular apparatus breaks down. Chemical disinfectant must be increased to maximum. All water mains must be thoroughly flushed. These precautions are absolutely necessary because of the prevalence of typhoid fever in Allentown at the present time.

"SAMUEL G. DIXON."

A temporary apparatus has been installed at Shantz Spring for the application of hypochlorite of lime at this point, and the temporary apparatus in the old pump house is held in reserve in the event of a breakdown at the chlorine gas plant in connection with the Crystal Spring supply.

The Department's officers supervised the draining of the distributing system in the city. Fire hydrants were opened throughout the system and a thorough flushing was accomplished. The dose of chemical was increased to 1½ pounds of chlorine per million gallons.

The city authorities were instructed to exercise every precaution to see that the chemical disinfection apparatus was constantly operated in order that at no time might untreated water be supplied to the consumers.

ALTOONA TYPHOID FEVER.

During portions of May and June, 1915, an outbreak of 34 cases of typhoid fever occurred in the city of Altoona. This outbreak was investigated by the writer assisted by Special Inspector Ira F. Zeigner and Inspector L. S. Imler, on June 18th and 19th, and from the facts collected the following report has been prepared:

The City of Altoona, an industrial community, is located in the central part of Logan Township, Blair County, near the head waters of the Juniata and Little Juniata Rivers. The present population is about 58,000.

The entire population of the city uses the municipal water supply, with the exception of approximately 2,000 people residing in the twelfth ward, formerly known as Millville, and supplied with water by the Allegheny Water Company. The supply for the municipal water works is obtained from Baker Run, Glen White Run and McGarvey Run. Scotch Gap Run and Sugar Run are utilized as emergency supplies. The flow of Baker and Glen White Runs is collected in three reservoirs known as Kittanning Point, Impounding Dam and Lake Altoona, located below the junction of Baker and Glen White Runs on Burgoon Run in the Horseshoe Curve of the Pennsylvaia Railroad at Kittainning Point near the western border of Blair

County at a point 4 miles southwest of the city. A caretaker employed by the water department lives on the property near the Kittanning Point reservoir, and whenever rain occurs the first wash is diverted around the reservoirs through the waste-way channel. Careful and explicit instructions have been issued to this caretaker, and there is every reason to believe that they are followed out. The flow of Scotch Gap Run is ordinarily piped from the intake on this stream direct to Lake Altoona, and McGarvey Run flows into Lake Altoona. The flow of Sugar Run is delivered from an intake on this stream into the 16-inch gravity supply line leading from Lake Altoona to the city.

The watershed of Baker Run comprises an area of 4 square miles on which there are 6 mine openings. There are 205 properties on the shed housing a population of 862. In July, 1914, 120 separate pollutions existed on 57 unsatisfactory properties, and notices calling for the abatement of these pollutions were promptly served on the property owner. Three cases of typhoid fever were reported as occurring during the past 10 years.

Glen White Run has a watershed of 5 square miles on which are located 5 drift mines. At the time of a sanitary inspection by Department officers in July, 1914, there were 80 properties with a total population of 354. Eleven pollutions existed on 11 unsatisfactory estates. Fourteen cases of typhoid fever were reported as occurring during the past 10 years.

Scotch Gap Run comprises an area of 2.15 square miles on which are located 6 properties with a population of 30 people. No pollutions exist on this watershed.

McGarvey Run drains an area of 913 acres there being no habitations on this drainage area.

Sugar Run has a watershed above the intake of 6.1 square miles on which there are 123 properties housing 548 people. In July, 1914, 34 separate pollutions existed on 16 unsatisfactory properties. Notices calling for the abatement thereof have been served.

Both a high and low service distributing system is maintained in the city. The low service is supplied by Lake Altoona, the impounding reservoir, and during periods of drought from Sugar Run, while the high service is supplied direct from the Kittanning Point reservoir. The low service section comprises practically all of the down-town portion as well as a majority of the residential sections, in all, about 70 per cent. of the municipal area. The distributing and equalizing reservoir for this section is located on Prospect Hill and has a capacity of 3,000,000 gallons. The high service section comprises the outlying districts of the city, and the distributing and equalling reservoir for this territory has a capacity of 13,000,000 gallons.

Approximately 57,000 people are furnished with water by the municipal system, about 40,000 from the low service and 17,000 from the high service. The average daily consumption at the present time is about 3,500,000 or 60 gallons per capita per day. The total capacity of the storage reservoirs is approximately 1,042,000 gallons. The storage of the high pressure district is 65,000,000 gallons, which would be equivalent to a sedimentation period of approximately 45 days if it were not for the fact that ordinarily practically all of the water for the entire system passes through this reservoir before reaching the low service reservoir. The storage capacity of the reservoir supplying the low service is 970,000,000 gallons, which would be equivalent to a storage period of 8 months if these reservoirs were full all the time.

Two permits have been issued to Altoona relative to water works. The permit of September 18, 1914, approved the existing water works system, the reconstruction of the distributing and equalizing reservoir for the high service district of the city and Sugar Run as a new source of supply. It contained among others the following stipulation:

"FOURTH: Apparatus for the addition of a chemical germicide to the water shall be installed at or near the reservoirs furnishing the sources of water supply. In the case of the reservoirs in the vicinity of Kittanning Point station, the apparatus shall be maintained in readiness for use in case of emergency, as indicated by the occurrence of contagious diseases on the watershed or analyses of samples of water taken from the stream or the public system. In the case of the Sugar Run supply, the germicide shall be added continuously whenever this supply is used until such time as permanent, adequate, protective measures are installed. Plans showing the details of the apparatus shall be submitted to the State Department of Health for approval within two months from the date of this permit."

The permit of November 25, 1914, approved plans for the installation of apparatus for the addition of a chemical germicide to the waters obtained from Sugar Run as a temporary protective measure. This apparatus was installed and has been used whenever Sugar Run water has been delivered to the city.

On June 11, 1915, the hypochlorite of lime treatment plant installed on Sugar Run for the treatment of water used from this stream was moved to the dyke extending around the up-stream end of the Kittanning Point reservoir and all water obtained from Baker and Glen White Runs was treated prior to its entrance to the reservoirs. The lime was added at the rate of about 10 pounds per million gallons. It is the intention of the city to install weirs on each of these streams in order that more accurate disinfection of the water may be secured.

Water from Scotch Gap Run was delivered into Lake Altoona for some time prior to June 4, 1915, when its use was discontinued. There are 6 properties on the watershed of this stream, and the most recent inspection by the Department officers showed the premises to have been in a sanitary condition.

Samples of water were collected on June 19th from taps on the high service and the low service systems from Baker Run, Glen White Run and Scotch Gap Run above the reservoirs. These samples were analyzed at the Department laboratories, the results being as follows:

	Bacteria Per c. c.	B. Coli. Per c. c.
No. 1 Glen White Run,	480	0
No. 2 Baker Run,	22	0
No. 3 Scotch Gap Run,	4,320	6
No. 4 Scotch Gap Run,	2,340	12
No. 7 Low service, Railroad St., 10th Ave.,	4,320	0
No. 8 Low service, 1603 11th Ave.,	11	0
No. 9 Low service, 804 12th Ave.,	96	0
No. 10 Low service, 1013 9th Ave.,	48	0
No. 11 Low service, 600 8th Ave.,	22	0
No. 12 Low service, 214 7th Ave.,	360	0
No. 13 High service, 1210 15th Ave.,	4	0
No. 14 High service, 12th St., 18th Ave.,	2	0
No. 15 High service, 1608 15th St.,	26	0
No. 16 High service, 1608 2nd Ave.,	8	0
No. 17 High service, 1326 1st Ave.,	8	0
No. 18 High service, 904 3rd Ave.,	56	0

On June 16, 1915, the Bureau of Water, Altoona, had 4 samples analyzed by the Pennsylvania Railroad laboratories. The examination gave the following results:

	Tap 20th Street.	Tap 14th Avenue.	Lake Altoona.	Kittanning Point.
Nitrogen as nitrites, parts per million,	Trace	None	None	None
Nitrogen as nitrates, parts per million,	0.18	0.10	0.06	0.08
Free ammonia, parts per million,	0.026	0.026	0.072	0.040
Albuminoid ammonia, parts per million,	0.048	0.070	0.092	0.064
Chlorine grains per gal.,	0.29	0.29	0.35	0.32
Number of bacteria per c. c., 24 hour count at 37½° C-6,	----------	1	6	4
Number of bacteria per c. c., 4 day count at 20 degrees C-10,	----------	4	14	12
B. coli communis,	Not present in 10 c. c.	Not present in 10 c. c.	Not present in 10 c. c.	Not present in 10 c. c.

Typhoid Fever Outbreak.

A record of typhoid fever cases occurring in Altoona has been submitted by the local board of health to this Department for each month from October, 1905, up to the present time. These records, however, do not correspond to those published

in the annual report of the local board of health. In the following table are shown the cases reported to this Department from October, 1905, to and including May, 1915:

	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915
January,	------	0	1	3	0	1	0	0	0	0	1
February,	------	3	2	2	0	0	1	0	3	0	1
March,	------	0	1	0	0	0	1	0	0	0	0
April,	------	2	2	2	1	1	1	0	2	0	0
May,	------	7	1	1	2	1	1	1	1	0	2
June,	------	1	4	4	2	5	0	0	0	3	------
July,	------	9	3	10	6	14	3	2	11	4	------
August,	------	26	19	29	26	22	6	7	17	4	------
September,	------	20	15	15	28	15	8	8	10	10	------
October,	3	22	15	6	12	8	6	17	8	5	------
November,	3	10	7	2	3	3	5	6	0	3	------
December,	6	3	3	0	1	0	3	0	0	1	------
Total,	12	103	73	74	81	70	35	35	52	30	------

During the investigation of the recent outbreak a census was made of all cases occurring during May and up to and including June 20th. In all 34 cases were investigated. Detailed data have been secured concerning all of these cases.

With respect to the onset, the dates are set forth below:

Date.	No. of Cases.
May 14th,	1
May 15th,	1
May 18th,	1
May 20th,	2
May 22nd,	4
May 24th,	3
May 25th,	3
May 26th,	1
May 28th,	1
May 29th,	2
June 1st,	3
June 2nd,	2
June 3rd,	2
June 4th,	2
June 5th,	1
June 6th,	1
June 7th,	1
June 8th,	1
Total,	**34**

The cases as divided with respect to sex show 16 females and 18 males.

The age of the patients is shown in the following tabulation which also shows the age with respect to the sex:

Age.	Male.	Female.	Total.	Age.	Male.	Female.	Total.
0- 4,	--	1	1	35-39,	1	3	4
5- 9,	1	1	2	40-44,	1	--	1
10-14,	5	3	8	45-49,	--	--	--
15-19,	4	3	7	50-54,	1	--	1
20-24,	3	2	5				
25-29,	2	3	5				
30-34,	--	--	--		18	16	34

The various occupations of the patients are shown below:

School children,	10
Machinists,	3
Motorman,	1
Housewives,	6
Clerks,	3
Laborers,	3
Child,	1
Operator,	1
Painter,	1
Deliveryman,	1
Silk weaver,	1
Car builder,	1
Carpenter,	1
At home,	1
Total,	34

It appears from the above that 50% of the cases were infants, students, housewives or persons residing at home, a total of 18 coming under this list.

In the following table is shown the distribution of milk supplies:

Carr,	1
Taylor,	6
Forst,	1
Robeson,	1
Hart,	1
Bardsley,	2
Probst,	1
Pressel,	1
Fischer,	2
Hileman,	1
Barnes,	1
Woostifer,	2
Morgan,	2
Fleck,	1
Visale,	1
Bush,	1
Krouse,	3
C. G. Smith,	1
Harshberger,	1
Fortenbaugh,	1
Unknown,	1
Condensed,	2
Total.	34

It thus appears that the 34 cases obtained milk from 22 different sources, six being the largest number of patients obtaining milk from any one source. Nearly one-half of the cases used no ice cream.

The distribution of the ice cream is as follows:

Caums,	5
Sanitary,	4
Caums and Sanitary,	2
Caums, Gobbs and Sanitary,	1
Caums and Prunnens,	1
Caums, Sanitary and Kreps,	1
Various places,	3
Unknown,	2
None,	15

The cases were scattered with one exception through individual houses. In but one instance where three cases occurred in one family were there more than one case in a dwelling. The first case reported occurred in the house having a total of three cases. The onset of the first case was May 14th, and of the two subsequent cases, May 28th and June 2nd, respectively. In all probability the second and third cases occurring in this family were from contact.

In the following table are shown the visits made within 30 days of the onset by the various patients:

None,	22
Dicksonville, Indiana Co.,	1
Lakemont Park,	1
Tyrone,	1
Mifflin,	1
Juniata Gap and Cresson,	1
Lewistown,	1
Frankstown Branch (fishing),	1
Harrisburg,	1
Roaring Springs,	1
Irvona,	1
Barnesboro,	1
Anglesea,	1
	34

None of the patients used shell-fish and but two used ice.

The distribution of uncooked vegetables by the patients is shown as below:

None,	20
Home grown,	6
Market and grocery stores,	8

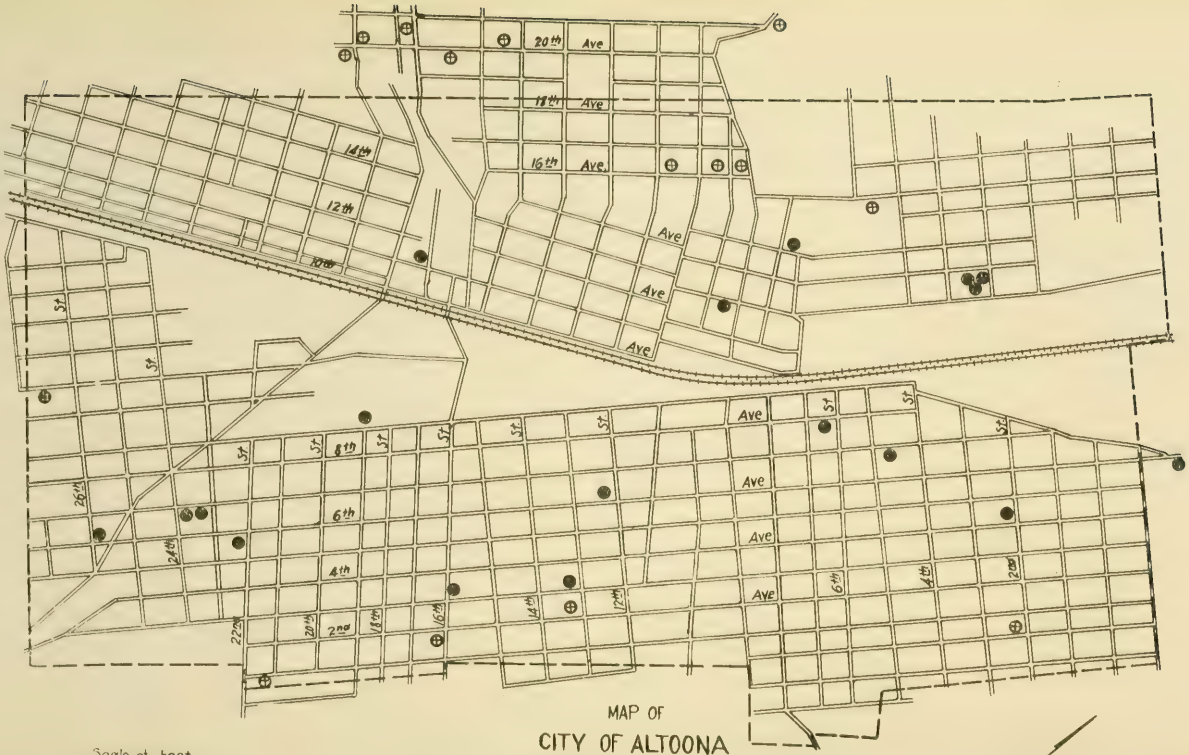
Care was not exercised by the local authorities in placarding the dwellings in which the cases occurred. But 9 houses were placarded, leaving a balance of 25. Sixteen of these cases, however, were removed to hospitals. The placards posted were the Department's, being signed by Samuel G. Dixon. It is reported that there were no placards of the local board of health available at this time.

All of the cases used water both at home and at work supplied by the municipal water works system. No cases occurred in the twelfth ward, which is furnished with water by the Allegheny Water Company. Fifteen of the cases occurred throughout the high service district and the balance or 19 in the low service district. The cases were scattered generally throughout the city, 14 occurring to the west of the tracks of the Pennsylvania Railroad, which divides the city, and 20 to the east of the tracks.

In the following table is shown the rainfall occurring during the months of April and May at a station established at Cresson by the State Water Supply Commission of Pennsylvania:

April 11,	0.23 inches
April 12,	0.23 inches
April 19,	0.02 inches
April 20,	0.12 inches
April 22,	0.24 inches
April 24,	0.01 inches
April 27,	0.11 inches
April 28,	0.16 inches
April 29,	0.05 inches
May 3,	0.10 inches
May 4,	0.53 inches
May 5,	0.12 inches
May 7,	0.02 inches
May 8,	0.04 inches
May 12,	0.16 inches
May 16,	0.28 inches
May 17,	0.30 inches
May 18,	0.03 inches
May 20,	0.79 inches
May 21,	0.70 inches
May 22,	0.83 inches
May 23,	0.36 inches
May 24,	0.70 inches
May 25,	0.01 inches
May 26,	0.11 inches
May 29,	0.50 inches
May 30,	0.75 inches
May 31,	0.01 inches

It appears from the above that during the period of two weeks prior to the onset of the first case, the total rainfall was 1.26 inches, the most severe rain occurring on May 4th when 0.53 inches fell. The heavy rains occurring from May 16th to the end of the month could have had no particular bearing on the outbreak in question.



MAP OF
CITY OF ALTOONA
SHOWING RELATION OF
TYPHOID FEVER CASES
TO THE
TWO DISTRIBUTING SYSTEMS

Scale of Feet
0 500 1000 1500

KEY
● Denotes case served from low pressure main
⊕ Denotes case served from high pressure main

Discussion.

Although no definite data were obtainable which point directly to the municipal water supply as the cause of the outbreak, it is possible that the infection was transmitted through this agency. The cases are widely distributed throughout the entire area of the city. Pollutions undoubtedly exist on the watersheds and the supplies are not above suspicion. The two samples recently collected at the intake dam on Scotch Gap Run show the presence of sewage organisms. This supply was used untreated during the period ending June 4th, yet no history of typhoid fever above the intake was discovered.

Water from Scotch Gap Run can be delivered to the low service district only and as 70 per centum of the total population use water from the low service district and but 56 per centum of the cases occurred there, the outbreak cannot be attributed entirely to the use of this water.

The sedimentation period afforded in the impounding dams undoubtedly improves the quality of the water, and the city maintains a germicidal apparatus in constant readiness for use at the Kittanning Point reservoir for the treatment of all water supplied to the reservoir from Baker and Glen White Runs. However, this plant is only placed in service when conditions on the watershed or the results of analyses of samples of the water indicate the necessity for its operation. More adequate purification or protection will be demanded in the near future.

On June 29th, the following communication, calling attention to unfavorable results of analyses of samples of water from Scotch Gap Run, was addressed to the city authorities:

"June 29, 1915.

"Mr. J. H. Cormnan,
"Director of Parks and Public Works,
"Altoona, Penna.

"Dear Sir:—Samples of water taken from Scotch Gap Run supply on June 19th and examined at our laboratories indicated the presence of bacteria of the colon group. As you know, these bacteria usually indicate sewage pollution.

"I am calling this matter to your attention, feeling sure that you will take such steps as may be necessary to abate any existing pollution on the watershed of this supply.

"I would request that you make an investigation and let me know whether you find conditions which would explain the presence of this pollution of the water. This investigation could well be made a part of the regular inspections which you are required to submit to the Department in accordance with the terms of the recent permit.

"If you find conditions are bad upon the shed, it might be well to consider some method of treating the water as a temporary precautionary measure.

"Yours very truly,

"SAMUEL G. DIXON."

The Bureau of Water of Altoona has had prepared inspection sheets, and from this time forward will make monthly inspections of each and every property on all the watersheds from which a supply of water is obtained and file copies thereof with this Department.

No suspicion whatsoever falls on the milk supply. Rules and regulations prohibiting the sale in the city of all but pasteurized, sterilized or certified milk have been promulgated and are enforced. Due to the limited number of patients using ice, ice cream, shell-fish and uncooked vegetables and of the varied merchants and manufacturers from which these supplies were obtained, the cause of the outbreak cannot be attributed to their use.

Attached to this report is a map of the city showing the location of the typhoid fever cases with respect to the high and low service distributing systems.

TYPHOID FEVER AT NEW KENSINGTON, ARNOLD AND PARNASSUS, WESTMORELAND COUNTY.

From September 30, 1914, to January 21, 1915, 50 cases of typhoid fever developed in the boroughs of New Kensington, Arnold, Parnassus and vicinity, Westmoreland County. On January 13, 1915, the undersigned assistant engineer undertook an investigation of the outbreak and the water works, assisted by Inspector C. M. Collins.

New Kensington is situated on the east bank of the Allegheny River about 18 miles northeast of Pittsburgh. It has a population of 9,700. Arnold, with a population of 2,400, is contiguous to New Kensington on the north. The borough of Parnassus adjoins New Kensington on the south, its population being estimated at 3,400. These three boroughs form, in reality, one community, the population of which, including the suburban villages of Valley Camp and Valley Camp Heights in Lower Burrel Township, is estimated at 16,500. There are large and varied

industries in the community as well as smaller manufacturing concerns, employing a large number of the foreign laboring class who form a considerable part of the population. The three towns are very generally sewered to the river.

Arnold, New Kensington, Parnassus and most of the suburbs in Lower Burrel Township are supplied with water by the Kensington Water Company, which operates a pump station and filtration plant at Valley Camp Station, about one-half mile up-stream from Arnold, obtaining its supply from the Allegheny River. The plant consists of three 16-inch intakes connecting with a 20-inch line leading to a pump well from which a 20-inch suction line through the low service pump discharges through eight 6-inch aerating risers to a concrete sedimentation basin located about 20 feet north of the pump. This basin has a capacity of 500,000 gallons and affords about four hours' sedimentation. A single underflow cross baffle is constructed in the sedimentation basin. Four 8-inch submerged funnel outlets connect with a 20-inch gravity pipe to the filter house, and this main influent feeds the individual 8-inch influents to the six filter units. The filters are of the standard rectangular type, of concrete construction, with a capacity of one-half million gallons per 24 hours at the rate of 125,000,000 gallons per acre per day. They are equipped with small brass strainers of the "Pittsburgh" type on a manifold collecting system. An air agitating system of standard type is superimposed on the collecting system. The filtering medium consists of about 30 inches of sand and 10 inches of gravel. The filter effluent pipes are 8 inches and are equipped with rate controllers. The wash water pipe is a 6-inch connection from the force main equipped with a reducing valve which limits the maximum pressure to 25 pounds. The filters are equipped with 4-inch rewash and 8-inch sewer connections, Humphreys loss of head gauges and sampling taps.

The east end of the filter house is three stories high. The upper floor contains a laboratory and a storage room in which is located also apparatus for feeding dry lime to a water jet connection to the raw water suction line. On the middle floor are situated five concrete solution tanks which are each 4 feet by 4 feet 6 inches in plan and 6 feet deep and equipped with mixing traps. On the lower floor are the orifice boxes of all of the five solution tanks and also the air blower. A 2-inch pipe conducts the coagulant to the raw water suction pipe and a similar pipe carries disinfecting solution to the effluent end of the clear water well. A clear water basin lies below the filters and has a capacity of 100,000 gallons. From a sump in the clear well two 16-inch suction pipes lead to the high service pumps, which raise the water to a ten million gallon equalizing reservoir situated on the top of the hill northeast of Arnold. The inlets and outlets of this reservoir are controlled with check valves so that water must enter at one end and leave at the other. A steel tank of 350,000 gallons' capacity, located near the main reservoir, is used for storage and equalizing purposes when it is desired to put the larger reservoir out of service. No by-pass exists for pumping unfiltered water to the distributing system.

The plant is operated almost continuously, and reports of operation have been received by the Department since the plant first began operating. The average daily consumption is approximately three million gallons. Simple chemical determinations are made each day by the operator in charge and bacteriological analyses are made weekly or more often by the operator and by Mr. Humphreys at the laboratory of the Tri-Cities Water Company in Charleroi. It is claimed by the operator that there was absolutely no irregularity in the operation of the plant in November or December of 1914. Both Mr. McClanahan, superintendent of the Kensington Water Company, and Mr. Humphreys stated that while they had no evidence of any irregularities in the operation of the plant, such may have occurred. Including the operator, three men are employed on the day shift, tending the boilers, pumps, filters and chemical apparatus. At night two men operate the entire plant. On several occasions in 1914 the Department's assistant engineer found the filter house unoccupied and the filters not operating properly. At one time raw water from several of the filter tubs was overflowing into the pipe gallery, which condition is, of course, a menace because of the danger of the raw water leaking into the clear well. The equipment of the plant requires close attendance.

Reports of the operation show that the chlorinated lime treatment varied from .025 grains per gallon (.4275 p. p. m.) to .052 grains per gallon (.8892 p. p. m.) during November and December, 1914. Owing to the natural coagulation in the Allegheny River, difficulty is experienced in treating the raw river water with chlorinated lime without imparting a decided chlorine taste, consequently the rate of treatment must be changed frequently. On December 9, 1914, the method of coagulation was changed from alum and soda ash treatment to hydrated lime. Although the report for that day stated that it was not reliable as to the strengths of solutions of chemicals used, the operator claims that the proper coagulation of the water was maintained. No bacteriological analyses were made on the days on which the operation might be suspected as having been irregular.

In January the Department collected and had examined bacteriologically at its laboratories fifty-one water samples, a few from private sources, but most of them from the public supply and filter plant, but the results did not show any evidence of pollution in the supply at this time.

The plant of the American Window Glass Company, employing 1,000 men and situated in the borough of Arnold, operates a pumping station supplying raw river water to all parts of its factory for boilers, cooling of machines, tools, etc. A 4-inch metered service from a 16-inch main of the water company connects by

two branches to the piping system in the glass factory. There are gate valves on these two branches. The piping is so arranged that the entire factory can be supplied with filtered water from the Kensington Water Company or raw river water. The pressure of the former is at least 55 pounds the greater. Eight or ten times annually the filtered water pressure drops to 100 pounds or less while water is being used to blow out the crib intake in the river. Perhaps twice a month the glass works water pressure is raised to 110 pounds for flushing and testing fire hydrants. Rarely would these operations coincide so that the prevention of unfiltered water passing into the distributing system would depend upon the tightness of the valves. Several other dual connections between the public water works and raw river water industrial supplies were found, but in none of these private systems was it possible to raise the pressure so as to even approach the pressure of the filtered water, thus precluding any possibility of its being contaminated.

Drinking water at the glass works is supplied to employes in bucket coolers, but the ice used therein is first washed in tool cooling troughs containing raw river water. Common drinking cups are used and the employes frequently drink from the flushing hose and other raw water taps through the factory. The "Pittsburgh" plant of the American Sheet Tin Plate Company, located in New Kensington, is equipped with bubbling fountains supplying water from a drilled well. There is also a raw water supply system located in this factory. At the Valley Camp mine there is no provision for supplying the employes with drinking water, with the exception of a well near the entrance of the mine. Less sulphurous springs in the mines were sometimes used by the miners, so it is reported. These springs are probably polluted by the privies of Valley Camp Heights under which the workings of the mine extend.

Typhoid Fever.

A list of the cases of typhoid fever reported since October 1, 1914, was compiled from the records of Dr. A. J. Bearer, Mr. N. S. Goslin and Mr. R. N. Anderson, secretaries of the boards of health of the boroughs of New Kensington, Arnold and Parnassus, respectively, and Mr. H. S. Weister, health officer of Lower Burrel Township. A complete census of the cases was made with the assistance of Inspector C. M. Collins, and from it the following tables have been prepared:

Date of Onset.	Number of Cases.	Date of Onset.	Number of Cases.
1914—Sept. 30,	1	Dec. 24,	2
Oct. 11,	1	Dec. 25,	2
Oct. 24,	1	Dec. 26,	1
Nov. 1,	1	Dec. 27,	3
Nov. 19,	1	Dec. 28,	4
Nov. 20,	1	Dec. 29,	1
Nov. 21,	1	Dec. 30,	2
Nov. 23,	1	1915—Jan. 1,	1
Nov. 26,	1	Jan. 3,	2
Nov. 28,	2	Jan. 4,	1
Dec. 1,	2	Jan. 5,	2
Dec. 3,	1	Jan. 6,	2
Dec. 10,	1	Jan. 7,	1
Dec. 13,	1	Jan. 9,	2
Dec. 18,	1	Jan. 14,	1
Dec. 19,	1	Jan. 15,	2
Dec. 20,	1	Jan. 18,	1
Dec. 22,	1		
		Total,	50

Age Period.	Number of Cases.			Age Period.	Number of Cases.		
	Male.	Female.	Total.		Male.	Female.	Total.
0- 4,	0	0	0	35-39,	3	0	3
5- 9,	2	6	8	45-49,	4	0	4
10-14,	4	10	14	40-44,	6	0	0
15-19,	2	4	6	50-over,	1	0	1
20-24,	2	1	3				
25-29,	2	2	4		25	25	50
30-34,	5	2	7				

Occupation.	Number of Cases.	
	Male.	Female.
American Window Glass Company,	8	0
American Sheet & Tin Plate Co.,	3	0
Valley Camp Mine,	3	0
United States Aluminum Company,	2	0
Schools:		
Third ward, New Kensington,	2	4
First ward, New Kensington,	0	1
High school, Arnold,	0	1
Public school, Arnold,	1	6
High school, Parnassus,	1	0
Old school, Parnassus,	2	0
St. Joseph's parish,	1	1
Kittanning,	0	2
Valley Camp,	0	1
At home,	0	8
Clerk,	0	1
Merchant,	1	0
Wierton, W. Va., tin plate works,	1	0
	25	25

Water Supply.	Number of Cases.
Public only,	27
Public and raw river,	9
Public, raw river and well at 1628 Stanton Avenue,	1
Public and well at 627 5th Avenue, Parnassus,	1
Public and various Parnassus wells,	1
Public and New Kensington 3rd ward school well,	4
Public and New Kensington 3rd ward school well and well at 411 Freeport Road,	1
Public and New Kensington 3rd ward school well and Taylor Avenue spring,	1
Public and Arnold public school well,	1
Public and Stranch spring,	1
Kittanning public supply,	2
Wierton, W. Virginia,	1
	50

Milk Supply.	Number of Cases.	Milk Supply.	Number of Cases.
Keystone Dairy,	17	McCracken,	1
Enterprise Dairy,	3	Dibroso,	1
White Dairy,	1	Kittanning,,	2
Egli,	7	Own cow,	1
Leslie,	3	Condensed only,	5
Kitzer's Dairy,	1	Wierton, W. Va.,	1
9th Street Dairy,	1	Various (rarely),	4
Harbarovitch,	2		50

DISTRIBUTION OF TYPHOID FEVER CASES AMONG CUSTOMERS OF FOUR PRINCIPAL MILK DEALERS.

Milk Dealer.	Number of Customers.	Number of Cases.	Per cent.* of Trade.	Per cent.* of Cases.
Keystone Dairy Co.,	1,500	17	54%	57%
Egli (Anthony),	500	7	18%	23%
Enterprise Dairy Co.,	600	3	21%	10%
Leslie (Reed),	200	3	7%	10%
Total,	2,800	30	100%	100%

*Four dealers only.

The Keystone Dairy Company, Anthony Egli, Enterprise Dairy Company and Reed Leslie were the principal milk dealers. Inspection was made of these dairies. They are not suspected of having been a factor in the epidemic.

The Keystone Dairy Company maintains a plant and office in Parnassus, its route of service covering the entire territory of New Kensington, Arnold and Parnassus, with some outlying districts including Valley Camp and Valley Camp Heights. About 250 gallons of milk is collected daily by this company from 25 dairy farms. All milk is pasteurized at 145 degrees Fahrenheit for thirty minutes. Bottle trade only is engaged in, except occasional sales to small wholesale dealers. All bottles and cans are scalded and steamed, the sterilizing and washing being performed by machinery of modern type. Analysis by Department laboratories of samples of the well water used in washing the bottles showed a total count of 15 bacteria per cubic centimeter with B. coli absent.

Anthony Egli owns and operates a dairy farm on Freeport Road, Lower Burrel Township, Westmoreland County, about 2½ miles northeast of New Kensington. About 90 gallons of milk is collected daily from five dairy farms and distributed to about 500 families in the New Kensington, Arnold and Parnassus district. There is no history of typhoid fever on any of the supplying dairies for at least two years, and, as far as could be learned, there has been none for years previous.

The Enterprise Dairy Company operates a typical milk depot at 965 Fifth Avenue, New Kensington. Milk is bought from seven farmers in the vicinity and about 160 gallons is distributed daily to between 500 and 700 customers. The delivery route of this company covers all parts of the district except Arnold Hill and Olympus Hill in Parnassus. Milk is delivered both in bottles and cans to private trade and also to a few grocery stores.

Reed Leslie operates a dairy farm on Freeport Road, Lower Burrel Township, Westmoreland County, a few miles from New Kensington. He obtains about 30 gallons of milk daily from three farmers and produces about 30 gallons daily on his own farm. There is no history of typhoid fever on any of the four farms supplying milk. He serves about 200 customers in New Kensington, Arnold, Parnassus and Valley Camp.

Ice, ice cream, shell-fish and uncooked fruit and vegetables were used by but few of the cases and the sources varied so that no significance could be attached to these features.

The number of cases reported in New Kensington was 21, in Arnold 22, in Parnassus 6 and in Valley Camp (Lower Burrel Township) 1. These figures are not proportional to the population and even show a strikingly high rate for Arnold, the population of which is one-fourth that of New Kensington. If the cases attributable to causes other than the public water supply are deducted from the total figures there remain for New Kensington 17, for Arnold 14, and for Parnassus 4. This still leaves Arnold with a high proportion and Parnassus with comparatively few cases. This difference in rate may be due to the probably greater susceptibility of the foreign laboring class largely inhabiting Arnold and also to the higher class of population in Parnassus and the general use of water from drilled wells for drinking purposes in the latter borough.

Three cases were imported, two from Kittanning, Pa., and one from Wierton, W. Va., where typhoid fever epidemics had recently occurred. These three cases alone had not used the water supplied by the Kensington Water Company. Two other cases were considered as not unlikely secondary to earlier ones. The ten cases which drank raw water in the industrial plants are attributed to this source of infection. This leaves 35 cases which must be attributed to the public water supply or some undiscovered source of infection. Six of these had dates of onset far apart during September, November and December up to December 10th.

The remaining 29 cases came on, and after December 18th, nine days after the change in the process of coagulation and the possible attendant irregularity at the filter plant, and commencing with this date the onsets were frequent, at a rate of more than one a day for awhile.

Under the direction of the Department's engineer the employes at the glass works were notified verbally and by notices in different languages of the danger of drinking raw river water.

A letter emphasizing the danger of the existing water system and the desirability of installing devices for effectively preventing the use of the raw river water for drinking purposes, and also calling attention to the regulation prohibiting the use of the public drinking cup, was sent to the American Window Glass Company under date of January 16, 1915.

To avoid flooding of the pipe gallery and possibly of the clear water flume, the overflow of the sedimentation basin feeding the filters was lowered at the instance of this Department, and, also, curbs were constructed around all openings from the pipe gallery into the clear water flume to prevent floor washings dripping into the latter. The chemical treatment is receiving careful consideration and there is reason to believe that there will be much less chance of irregularities in the operation of the plant in the future.

Careful, systematic supervision of the dual connections is imperative until satisfactory provision can be made for eliminating them entirely, at least under the present arrangements whereby entire reliance for protecting the public distributing system from the raw river water is placed upon the tightness of a single gate valve and upon its being closed in case the pressure of the raw water becomes greater than that of the filtered water.

The Allegheny River during the fall of 1914 and into the winter undoubtedly carried much sewage laden with typhoid fever germs. In August, 1914, there was an epidemic at Warren, more than half way up the river to its source, and in November and December there were epidemics at Kittanning and Ford City within 25 miles up-stream from Arnold. These towns discharge their sewage untreated into the river. Meteorological conditions were favorable for the transportation of the infection down-stream and though the distance is great the Kittanning and Ford City epidemics may have been due largely to the sewage from Warren (cf. 1914 report), and in turn furnish a most plausible explanation of the New Kensington, Arnold and Parnassus outbreak of typhoid fever, when considered in connection with the irregular operation of the filter plant and the drinking of raw water at the factories.

TYPHOID FEVER AT BRISTOL.

The borough of Bristol is situated on the north bank of the Delaware River in the southern part of Bucks County, fourteen miles below the City of Trenton, New Jersey, and about ten miles above the intake of the Torresdale filter plant of the City of Philadelphia. The tidal influence in the river extends to Trenton, and at Bristol the average difference between high and low tide is about five feet. The up-stream boundary of the borough is Adams Hollow Creek and the down-stream boundary is Otter Creek, and along the northern side is the Mill Pond. The Delaware Division of the Pennsylvania Canal, still in use, extends through the center of the town east and west. Most of the industrial plants lie between it and the old tracks of the Pennsylvania Railroad to the south. The main line of the New York Division of the Pennsylvania Railroad extends through the northern part of Bristol. The population of the borough is estimated as 10,000. It was 9,256 in 1910 and 7,104 in 1900.

Water Works.

The water works are owned by the municipality, having been purchased from the Bristol Water Company a few years ago. The filter plant and pumping station are located on the bank of the Delaware River near the corner of Walnut and Radcliffe Streets. The supply comes directly from the Delaware River through a 24-inch cast iron intake pipe (extending 55 feet beyond the bulkhead), to which the suction lines of the raw water pumps are connected and also for emergency use the suctions of the high service pumps.

Two centrifugal pumps, each having a capacity of 2,000,000 gallons per twenty-four hours, discharge into two wooden settling tanks, each 23 feet in diameter and 30 feet high, and having a combined capacity of 124,310 gallons. At the present consumption, which is about 700,000 gallons per twenty-four hours, these tanks provide a settling period of about four and a quarter hours. Alum is added to the raw water just before it enters the settling tanks. The alum is dissolved in a submergence cage, the water level in the solution box being regulated by means of an adjustable overflow weir.

From the settling tanks the water flows to four wooden filter tanks, each 15 feet in diameter and 7 feet deep, equipped with a belt-driven agitator, sand and gravel, cast iron manifold and strainer system. Each of these tanks has a capacity of 500,000 gallons per twenty-four hours at a rate of 125,000,000 gallons per acre per day. Rate controllers of the butterfly type and loss of head gages are provided. It appears that these installations have not proved satisfactory.

Beneath the filters is located the clear water well, which has a capacity of 64,000 gallons. A solution of hypochlorite of lime is introduced into the suction line leading to the high service pumps at a point just outside the pumping station. The dissolving tanks and orifice box are located in the filter house at a distance from the point of application, and a considerable length of the feed pipe is buried in the ground so that it is impossible to inspect it. A leak might occur in the feed line and be unnoticed for some time.

Two Worthington compound duplex pumps, having capacities of 2,000,000 gallons and 1,666,000 gallons per twenty-four hours, are installed in the pumping station. Water is pumped into the distributing system and the surplus goes to an elevated tank located on the south side of Pond Street between Walnut and Mulberry Streets. The top of the tank is 174 feet above foundation piers. The tank is 34 feet in diameter, has a maximum depth of 24 feet and a capacity of 150,000 gallons. The total water capacity of the tank and its 4-foot riser pipe is 171,000 gallons.

At the pumping station is an old stand pipe 6 feet in diameter and 152 feet high, having a capacity of 32,000 gallons. Prior to the installation of the elevated tank on Pond Street it was used as a storage tank in connection with the distribut-

ing system, but is now used for storage of water for the boilers and for washing the filters. It is reported that the connection between this stand pipe and the distributing system is broken.

A small laboratory is located in the filter house. Weekly reports are sent in to the Department giving the results of daily lactose bile fermentation tests and alkalinity determinations of the raw, settled and filtered water, the amounts of chemicals used and the volume of water pumped. From these reports it appears that the fermentation tests were positive in both 1 c. c. and 10 c. c. samples thirteen times during January and eight times during February of this year, and also on the following dates: March 5th and 16th, April 28th and May 10 and 11th. After March 1st the amount of alum used varied from 0.3 of a grain to 2.8 grains per gallon and the amount of hypochlorite of lime varied from 0.08 to 0.142 of a grain per gallon. Prior to May 17th nine pounds of hypochlorite of lime were used daily. On that date the amount was increased to ten pounds and on May 29th was increased to twelve pounds. After the first of March the amount of water pumped varied from about 530,000 gallons to 1,000,000 gallons per day, the average being about 700,000 gallons per day.

An industrial fire protection system is maintained by four of the industries located along the canal, namely, W. S. Grundy and Company, Edward T. Steele Company, Thomas L. Leedom and Company and the Bristol Wall Paper Company. The water is obtained from the canal. This system was first installed some twenty years ago and has been improved from time to time. Storage is afforded by three elevated tanks each having a capacity of 50,000 gallons. The tops of the tanks are about 137 feet above the ground. One of these is located at the Grundy mill, another at Steele's mill and the third at Leedom's mill. The pumping equipment comprises a Barr pump, capacity 560 gallons per minute, at the Grundy mill; a Worthington pump, capacity 1,000 gallons per minute, at the Edward T. Steele and Company plant, and also at the Leedom mill; a Worthington pump, capacity 350 gallons per minute, at the plant of the Bristol Wall Paper Company. These pumps are all available to pump canal water into the industrial fire protection system and the storage tanks.

About three years ago two connections were made between this fire protection system and the distributing system of the borough, in order that in case a large conflagration occurred in the town the industries could pump water from the canal into the municipal distributing system. One of these connections is located at the corner of Canal and Jefferson Streets, and the other in Canal Street near Beaver Dam Road. In each instance a 6-inch gate valve, which is kept closed and locked, separates the two supplies. It is reported that the keys are in possession of the borough and the connections have never been opened. During this year the maximum pressure recorded in the industrial system was 72 pounds per square inch on April 1st, when an underwriter's test of the fire hose was made at the Bristol Wall Paper Company. However, it is reported that at times when hydraulic tests of the pipe lines are made the pressure is run up to about 110 pounds per square inch. It appears that normally the pressure in the borough system is greater than that in the industrial system, but the reverse might be true under certain conditions.

At the plant of the Standard Cast Iron Pipe and Foundry Company on Radcliffe Street, in Bristol Township, a connection closed by a 6-inch gate valve is maintained between the borough distributing system and the fire protection system in the plant, which is supplied with raw water from the Delaware River. The storage is afforded by a stand pipe 80 feet high. It is reported that the connection between the two systems has not been opened within a year and that the pressure in the borough system is always greater than in the industrial system. However, it appears possible that the reverse might be true under certain conditions.

Sewerage.

Bristol has installed a sewerage purification plant for the treatment of all of the sewage of the borough. It was first placed in commission on January 8, 1915, but continuous operation was not started until May 10th. Up to May 13th, 487 permits for connections had been issued, leaving a large majority of the 1,800 homes to be connected in the future. There is no borough ordinance requiring abutting properties to be connected.

Throughout the borough the practice of discharging kitchen wastes and wash water into the street gutters is quite common. In many places they form stagnant pools.

The sewage treatment plant comprises preliminary tanks, sprinkling filters, final settling tanks and chemical disinfection and the effluent is discharged into the Delaware River. At the time of the Department's investigation in June, one hundred pounds of chlorinated lime in twenty-four hours was being used for the disinfection of the effluent from the sewage treatment works. The tidal flow carries the effluent back and forth past the water works intake. The results of analysis of a sample of the final treated sewage effluent collected May 26, 1915, gave a total count of 1,512,000 bacteria per c. c. and 42,000 B. coli.

Adams Hollow Creek receives sewage from private sewers and overhanging privies and also kitchen wastes and wash water and discharges in the Delaware River 2,400 feet above the water works intake.

During March, April and May, colon bacilli were found in 30 out of 39 one c. c. sample of raw Delaware River water collected and examined at the Torresdale filter plant ten miles below Bristol.

Typhoid Fever.

The Department's record of typhoid fever morbidity in Bristol as reported by the board of health is as follows, although the reports have not always been complete:

Years.	Number of Cases.	Years.	Number of Cases.
1905,	4	1910,	21
1906,	30	1911,	19
1907,	12	1912,	40
1908,	5	1913,	18
1909,	17	1914,	6

The large number of cases during 1912 were distributed throughout the entire year.

From April 1 to June 14, 1915, thirty-two cases of typhoid fever were reported to the Bristol board of health and two cases were reported in Bristol Township adjacent to the borough. One of these cases had been removed to Trenton and no information was obtained relative thereto. Data relative to the dates of onset, foods used, habits and other pertinent circumstances in connection with the 32 borough cases of typhoid fever and the one township case were collected and form the basis of the following tables:

Dates of Onset.	Number of Cases.	Dates of Onset.	Number of Cases.
April 4,	1	May 12,	1
April 5,	1	May 13,	1
April 23,	1	May 14,	1
April 24,	1	May 16,	1
April 25,	1	May 17,	2
April 26,	1	May 21,	3
April 27,	2	May 22,	1
April 29,	1	May 25,	1
April 30,	1	May 28,	1
May 1,	3	June 4,	1
May 3,	1	June 7,	1
May 7,	1		
May 10,	4	Total,	33

Age Period.	Number of Cases.			Age Period.	Number of Cases.		
	Male.	Female.	Total.		Male.	Female.	Total.
1,	0	0	0	20-24,	2	3	5
2,	0	1	1	25-29,	2	1	3
3,	1	0	1	30-34,	1	0	1
4,	1	1	2	35-39,	0	0	0
5-9,	2	3	5	40-44,	1	0	1
10-14,	2	2	4				
15-19,	8	8	10	Total,	14	19	33

Occupation.	No. of Cases.
Scholars, Bath Street school,	3
Scholars, Jefferson Ave. school,	2
Scholars, St. Mark's school,	3
Scholar, Washington Ave. school,	1
Scholar, Bristol high school,	1
Student, Trenton normal school,	1
Children at home,	5
Housewives,	6
Mill workers, Grundy Mill,	4
Mill workers, Leedom Mill,	2
Laborer, Corona Kid Works,	1
Laborer, Cornwells, P. R. R.,	1
Laborer for Weeks, plumber,	1
Driver of Linn's milk wagon,	1
Proprietor, fruit and vegetable store,	1
Total,	33

Nationality.	No. of Cases.
Americans,	22
Italians,	11
Total,	33

MILK SUPPLY.

Dealers.	No. of Cases.	
B. T. Groff only,	6	
Groff, Steele and Appleton,	1	
Groff and Linn,	*1	
Groff and Phipps,	1	
B. T. Groff (summary of cases),		9
John Smoyer only,	5	
Smoyer and Wright,	1	
John Smoyer (summary of cases),		6
Harry Wright only,	3	
Wright and Smoyer,	*1	
Harry Wright (summary of cases),		4
Thomas Huffnell,		3
John Betz only,	2	
John Betz and Wm. Betz,	1	
John Betz (summary of cases),		3
John Steele only,	1	
Steele, Appleton and Groff,	*1	
John Steele (summary of cases),		2
James Linn only,	1	
Linn and Stackhouse,	1	
Linn and Groff,	*1	
James Linn (summary of cases),		3
Harry Phipps only,	2	
Phipps and Groff,	*1	
Harry Phipps (summary of cases),		3
None used,		2
Condensed,		1
George Bruden,		1
		37
Less repetitions,		4
Total,		33

*Repetition.

Ice Cream.

Supplies.	No. of Cases.
None used,	17
Various,	5
Unknown used,	3
Fabian's and Riseley's,	2
Riseley's and Clark's,	1
Clark's,	1
Jeffries' and Townsend's,	1
Papajians,	1
Supply at Trenton, N. J., Normal School,	1
Artesian Ice Company,	1
Total,	33

Thirteen of the thirty-three cases may have used ice cream manufactured by cream supplied by Peter Hernig, a Philadelphia wholesaler. These thirteen cases include five who used ice cream from various sources and three who used unknown supplies.

WATER SUPPLY.

Source.	No. of Cases.
Borough water only,	23
Borough and unknown supplies,	2
Borough and well at 535 Swain St.,	2
Borough and possibly well at Corona Kid Works,	1
Borough and well at 335 Penn St.,	1
Borough and well at 409 Mill St.,	1
Borough and from P. R. R. laborer's buckets at Cornwells,	1
Borough and public supply at Trenton, N. J.,	1
Borough (probably), and melted artesian ice and various supplies in Bristol Township,	1
Total,	33

Shell-fish had been used by only one of the typhoid fever cases. Ice had been used by only ten cases. The supply had been obtained from the Artesian Ice Company which manufactures ice, using water derived from drilled wells and distilled. Uncooked vegetables and fruits had not been used by twenty-five of the typhoid fever cases within thirty days prior to their dates of onset. The remaining eight cases obtained supplies from various sources.

The information furnished by the foregoing tables does not point to any common source of infection for the typhoid fever cases in Bristol in 1915 among either the milk, ice cream, ice, shell-fish or vegetables and fruit supplies.

All the dairies supplying milk dealers in the borough were inspected about the middle of May by Dr. A. H. Haines, veterinarian, employed by the borough to inspect dairy and meat supplies. He made special inquiry relative to the presence or recent occurrence of typhoid fever at the dairies and did not learn of any cases. The milk dealers which supplied the greatest number of cases of typhoid fever, nine and six respectively, distribute large amounts of milk in the borough.

The use of the public water supply by all of the thirty-three cases with possibly one exception pointed with suspicion to the public water as a possible source of typhoid fever infection, especially in view of the numerous contaminated samples during the early part of the year. Very few of the typhoid fever cases used any other source of water supply in common.

Not only is the water of the Delaware before filtration polluted by sewage from the town, but also there is a suspicion of the filtered water in the distributing system possibly having been contaminated by the polluted water of the fire protection systems through the cross connections previously described. Many of the typhoid fever cases occurred in the eastern section of the town in which are the connections to the fire system using the canal water. Seventeen samples were collected during the period June 9th to 11th from taps of the borough's water works system in this vicinity and were examined by the Department laboratories. The results did not show the presence of colon bacilli in any of the samples and only one of them showed a high bacterial content, 2,540 per cubic centimeter.

Results of analyses of the other samples collected during the investigations are as follows:

	Bacteria per c. c.	B. Coli per c. c.
May 26, 1915:		
Tap of high service pump, filtered water 9:00 A. M.,	40	0
Effluent from filter No. 4, 9:25 A. M.,	104	1
Effluent from filter No. 3, 11:00 A. M.,	56	0
Effluent filter No. 2, 11:00 A. M.,	56	1
Tap of high service pump, filtered water 10:40 A. M.,	24	0
Tap, 256 Radcliffe St.,	24	0
May 27, 1915:		
Tap,117 Pond St.,	9	0
Tap, 320 Market St.,	4	0
Tap, 242 Wood St.,	360	1
Tap, 214 Mulberry St.,	240	0
Tap of high service pump, filtered water 10:20 A. M.,	16	0
May 28, 1915:		
Tap, 1028 Radcliffe St.,	2	0
Tap, 17 Lincoln Ave.,	4	0
Tap, 1106 Wood St.,	22	0
Tap, 214 Jefferson Ave.,	16	0
Tap, high service pump, 11:00 A. M.,	8	0
June 1, 1915:		
Tap, high service pump, 10:30 A. M.,	4	0
Effluent No. 2 filter, 11:00 A. M.,	200	0
Effluent No. 3 filter, 11:05 A. M.,	32	0
Effluent No. 4 filter, 11:10 A. M.,	11	0
Tap, high service pump, 11:20 A. M.,	7	0
June 3, 1915:		
Tap, high service pump, 11:00 A. M.,	8	0
Effluent No. 2 filter, 11:30 A. M.,	21	0
Effluent No. 3 filter, 11:36 A. M.,	19	0
Effluent No. 4 filter, 11:30 A. M.,	19	0

Ten of the typhoid fever cases gave histories indicating possible sources of infection other than the public water supply as follows:

One case fished and played in Adams Hollow Creek and at one time about two weeks prior to his onset drew creek water into his mouth.

Two cases occurred in a family in which there had been five previous cases, the most recent seven years ago. One of these previous cases had frequently cooked for the family and may be the carrier. The onset dates of the two recent cases were the same.

Two cases may have been infected through Linn's milk supply, having onset dates May 10th and 12th. John Strong, a driver for James Linn, retail milkman, became ill with typhoid fever on April 29th. These two cases were the only ones that might be charged to this milk supply. One of these cases had also associated with a previous case at Grundy's Mill and may have been infected by contact.

One case worked as a plumber's laborer putting in house connections to the sewer system in the eastern section of the borough and may have become infected in this way or by contact with a previous case with whom he associated.

Two other cases may have been due to contact from association with previous cases.

One case was very probably secondary from a previous case in the same house.

One case may have been imported. This man spent most of his time selling vegetables and fruit in Bristol Township and drank water from various sources while thus engaged.

Remedial Measures.

Two years ago a decree was issued to Bristol requiring the borough to engage the services of an expert to examine the public water works in detail and prepare plans for improvements. Last year the Department approved the preliminary plans submitted by the borough and ordered it to proceed with the detailed plans for the reconstruction of the filter plant, but these have not been submitted and it is in consequence that the borough is still receiving an unsatisfactory and dangerous water supply. The chemical germicidal plant installed in compliance with the order of the Department is only a partial protection.

The following order was sent out by the Department by telegraph in order that the public might have full warning of the dangerous condition of the water supply.

"June 3, 1915.

"Dr. Howard Pursell,
"Secretary Board of Health,
"Bristol, Pa.

"Issue public notices immediately to boil all water for domestic purposes pending Department's complete investigation of cause of present typhoid in Bristol.

"SAMUEL G. DIXON."

Under date of June 26th, the borough authorities were again notified more in detail of the dangerous conditions, the need to warn the public frequently in the meantime of the need to boil the water, and further of the urgency of taking steps to bring about the connection of all properties to the public sewer system so as to reduce to a minimum the pollution of the streams in the borough and of the Delaware River.

TYPHOID FEVER AT CANONSBURG.

Canonsburg, population 6,000, is in the north central part of Washington County about nine miles north of Washington, the county seat, and twenty-three miles southwest of Pittsburgh. The Chartiers Branch of the Pennsylvania Lines and an interurban trolley afford transportation facilities to Pittsburgh and to Washington. Chartiers Creek, a tributary of the Ohio River flows through the borough. A population of about 1,500 resides in Cecil, Chartiers and North Strabane Townships, within a half mile from the boundaries of Canonsburg.

About 4,000 people are employed in the industries in Canonsburg. The industries and the number of employes in each are given in the table below:

Industry.	Number of Employes.
Standard Tin Plate Co.,	1,000
Pittsburgh-Buffalo Coal Co. (Hazel Mine),	800
Fort Pitt Bridge Works Co.,	600
Continental Can Co.,	600
Canonsburg Steel and Iron Co.,	500
Canonsburg Pottery Co.,	300
Standard Chemical Co. (vanadium and radium products),	200
Total,	4,000

The unusually large number of workers as compared with the population is due to the large number of unmarried male foreigners in the community and to the fact that many girls are employed in several of the factories.

Public Water Supply.

The borough of Canonsburg and most of the unincorporated suburban settlements in Cecil, Chartiers and North Strabane Townships are supplied with water by the North Strabane Water Company. This company obtains its supply from Little Chartiers Creek and from one of its tributaries, Spears Run. A pumping station and filter plant, used for both sources, is situated on the creek about three miles east of Canonsburg. Spears Run is now the primary supply. Above the intake it has about three square miles of drainage area, inhabited, although sparsely. When the supply in the storage reservoir on Spears Run fails in the summer, water from Chartiers Creek is used. Its drainage area above the intake is about 30 square miles, including a number of villages.

The filter plant has a rated capacity of 2,900,000 gallons a day. The filtered and chemically disinfected water is pumped to a reservoir of about 5,000,000 gallons' capacity on a hill about one mile southeast of Canonsburg. The average daily consumption is about 900,000 gallons, all passing through this reesrvoir.

The filter plant was installed without the approval of this Department, and it was stipulated in the conditions of a permit issued on September 30, 1914, that the plant should be remodeled and equipped with modern control and regulating devices and chemical dosing apparatus. Up to the end of the year the conditions of this permit have been only partly complied with.

The filter plant is not operated carefully or in a scientific manner. The water supplied to the public is frequently quite turbid and samples collected from the distributing system have shown the presence of B. coli upon several occasions. Although there have been no serious outbreaks of typhoid fever attributable solely to the public water supply, the water furnished by the North Strabane Water Company is not safe, and it is the general belief that it is partly accountable for the high typhoid fever rate in the Canonsburg district.

Private Water Supplies.

A great many drilled and dug wells and springs exist in Canonsburg and vicinity and continue in general use because a supply of such doubtful purity as that furnished by the North Strabane Water Company is not inviting. Many of these wells and springs are polluted by the great number of surface privies in the outlying sections of the community.

Water from a number of springs and wells of doubtful purity in East Canonsburg, a village in Cecil Township, built around the Continental Can Company and the Standard Sheet and Tin Plate Company, is carried in buckets to these works because of the strong gas taste of the water obtained from drilled wells at these plants. The water obtained from the wells at the can factory, however, would seem to be a safe supply so far as indicated by the results of bacteriological analyses.

Another group of suspicious wells is to be found on East Pike Street, Canonsburg, where six of the typhoid fever cases herein considered occurred. Privies are located within short distances of the wells, and wash water thrown to the surface of the ground drains to the loose board covers of the wells.

During the investigation samples of water were taken from a number of private well supplies and four of them were found to be seriously contaminated. In other instances while an examination of the water in the Department laboratories did not disclose the presence of sewage organisms the physical conditions surrounding the wells were undoubtedly a great menace to the purity of the supplies.

Sewerage.

The borough is extensively sewered by a system, the plans of which were approved by the Department. Plans for suitable sewage treatment works were approved in 1915. The works have not yet been constructed.

Typhoid Fever.

The new borough of Canonsburg was incorporated in 1911, combining the old borough and South Canonsburg. Canonsburg has made the following reports to the Department of typhoid fever cases in the borough.

Year.	Typhoid Fever Cases.
1912,	14
1913,	21
1914,	11

The cases for 1913 are at the rate of 366.5 in 100,000 population, while the State rate for that year was 89.3.

Typhoid Fever in 1915.

The data relative to the twenty-two cases of typhoid fever investigated by the Department's officer are the basis of the following tables. Two cases occurring during the year, one in January and one in May were not investigated.

Date of Onset.	Number of Cases.	Date of Onset.	Number of Cases.
July 4,	1	October 2,	1
July 22,	1	October 8,	1
August 3,	1	October 9,	1
August 5,	1	October 28,	1
August 17,	2	October 29,	1
August 18,	1	October 30,	1
August 21,	2	November 1,	1
August 28,	1	November 8,	1
August 30,	3		
September 2,	1	Total,	22

Occupation.	Number of Cases.		
	Male.	Female.	Total.
At home,	3	4	7
Continental Can Company,	3	1	4
Fort Pitt Bridge Works,	2	----	2
Canonsburg Steel & Iron Co.,	1	----	1
Standard Tin Plate,	1	----	1
Huckster,	1	----	1
Housewife,	----	1	1
Canonsburg public school,	1	----	1
Limestone Spring school,	1	1	2
Carpenter,	1	----	1
Grocery store,	1	----	1
Total,	15	7	22

Place.	No. of Cases.
Canonsburg,	13
Chartiers Township,	6
Cecil Township,	2
North Strabane Township,	1
Total,	22

Of the thirteen Canonsburg cases, six resided in one block on East Pike Street, three lived in the same house on Greenside Avenue and four were widely distributed over the borough.

The six cases in Chartiers Township were all found in a small foreign settlement known as Jacobs Orchard, a short distance east of the borough of Canonsburg. Three of these occurred in one family. The cases in Cecil and North Strabane Townships were far removed from the other cases.

Water Supply.	No. of Cases.
North Strabane Water Company,	1
North Strabane Water Company and private supplies.	8
Private supplies (wells and springs),	13
Total,	22

Milk Supply.	No. of Cases.
Herron Brothers,	3
Mrs. Kutchki and others,	2
John Fidel,	1
Pruett,	1
Bob Nokli,	1
Annie Benben,	1
Brock,	1
Weaver and Tallag,	1
Own dairy and various in W. Virginia,	1
Condensed,	3
Own cow,	5
None,	1
Unknown,	1
Total,	22

Visits.	No. of Cases.
To other municipalities,	0
To large picnics,	0
To other cases,	8

Of the eight persons who visited other cases six obtained water from wells which the investigation established were seriously contaminated. The other two cases were probably secondaries, one of them contracted from a brother sick in the same household and the other by visits to two typhoid fever patients nearby.

Ice cream was eliminated as not an agency of the infection, since in only eleven instances was ice cream eaten and it was not obtained from any common source.

Ice was used in only one instance.

In no instances were shell-fish eaten during the period of incubation.

Uncooked vegetables and fruits were obtained from home gardens and from unknown venders. The investigation did not indicate that the infection could have been transmitted through these media.

Flies were numerous during the greater part of the period in question. The existence of open privies, garbage dumps and accumulations of filth offered opportunities for fly propagation and disease transmission in the outskirts of Canonsburg. The occurrence of several of the cases in proximity to previously developed cases might be attributable to this means of transmission, but in most of these instances the investigation pointed to more probable modes of infection.

Discussion.

The investigation pointed strongly to polluted private well and spring supplies as the source of infection in most instances. In the remaining cases contact with other typhoid fever patients no doubt was responsible for the contraction of the disease. Only five of all the cases investigated could not be reasonably attributed to specific sources of infection, and of these five one visited in West Virginia two weeks previously in a community where typhoid fever was reported to have been prevalent. In the remaining four instances while positive information is lacking it is very likely that water was obtained from some of the numerous dangerous wells or springs in the Canonsburg district.

Remedial Measures.

All of the wells and springs which were shown by analysis to contain organisms indicative of sewage pollution were placarded. The owners were ordered to close up the springs and remove the facilities with which the water was obtained from wells. The owners of other supplies which were dangerously located and subject to possible pollution from sewage and surface wash were warned to discontinue the use of water from these sources.

In order to bring about the more satisfactory operation of the North Strabane Water Company's filtration plant, the matter has been taken up with the company, looking toward the remodeling of the plant as required by this Department.

CHAMBERSBURG TYPHOID FEVER OUTBREAK.

During the spring of 1915 an outbreak of typhoid fever occurred in the borough of Chambersburg, Franklin County. All told 31 cases of typhoid fever were investigated, this including all the cases occurring during 1915 up to July 9th. This outbreak was investigated by the writer and Special Inspector Ira F. Zeigler on July 8 and 9, 1915. From the facts collected the following report has been prepared.

The borough of Chambersburg, the county seat of Franklin County, is situated in the Cumberland Valley near the divide between the Susquehanna and Potomac River basins and on the east branch of Conococheague Creek, a tributary of the latter. The borough has a population of about 13,000 and is a trading point for the surrounding farming country.

The supply of water for the borough of Chambersburg is obtained from Birch Run, a tributary of the east branch of Conococheague Creek, at a point about 10 miles east of the borough. A diverting dam has been built across the stream near its confluence with Hosack Run, and a 14-inch gravity supply main extends in a general easterly direction towards Chambersburg. Along this line, 2½ miles from the borough, a distributing reservoir of 2,200,000 gallons' capacity and an iron stand pipe of 25,000 gallons have been built, while in the borough there are two

distributing reservoirs with a total capacity of three million gallons. Birch Run at the intake has a minimum flow of 2,500,000 gallons daily and the total consumption averages 1,500,000 gallons.

Samples from various portions of the distributing system of the public water works system were collected on July 9, 1915, and analyzed at the Department's laboratories, the results being as follows:

	Bacteria per c. c.	B. Coli per c. c.
No. 1 Tap, 102 S. Second St.,	40	0
No. 2 Tap, C. V. Creamery,	360	0
No. 5 Tap, Second & Market Sts.,	4	0
No. 6 Tap, Public fountain at Square,	19	0
No. 1 Tap, 440 E. German St.,	8	0
No. 2 Tap, 441 West Queen St.,	8	0
No. 3 Tap, C. V. Railroad Station,	5	0
No. 4 Tap, 115 N. Fifth Ave.,	2	0
No. 5 Tap, 136 N. Main St.,	14	0
No. 6 Tap, Franklin & King Sts.,	8	0

The comprehensive sanitary sewerage system covers practically the entire area of the borough, the sewage amounting to approximately 660,000 gallons per twenty-four hours. In 1912, a modern disposal plant consisting of Imhoff tank, sprinkling filters, resettling basins and sludge areas was placed in operation, the effluent therefrom being discharged into the Conococheague Creek below the borough.

March 1,	2
March 8,	1
March 25,	1
April 1,	1
April 24,	1
April 29,	1
May 5,	1
May 7,	1
May 10,	1
May 11,	1
May 14,	2
May 16,	1
May 17,	1
May 18,	1
May 19,	1
May 20,	1
May 22,	1
May 23,	1
May 24,	2
May 29,	1
June 1,	2
June 3,	1
June 4,	2
June 5,	1
June 14,	1
June 17,	1
Total,	31

The cases with respect to age and sex are shown below:

	Male.	Female.
0- 5,	1	1
6-10,	5	1
11-14,	3	1
15-19,	1	2
20-24,	1	4
25-29,	1	2
30-34,	2	2
35-39,	0	0
40-44,	1	0
45-49,	1	0
50-54,	1	1
Total,	17	14

Data relative to the use of water by the patients is as follows:

Borough only,	27
Borough and well,	1
Borough and Orrstown,	1
Borough and others,	1
Borough and Redbridge Park,	1
Total,	31

The use of ice cream, shell-fish, uncooked vegetables, ice and milk is shown in the following tables:

The ice cream was distributed as follows:

None,	14
Minnich,	5
Undetermined,	1
Miller Drug Store,	1
Etter and Creamery,	1
Kyle,	1
Creamery,	4
Schonberger,	1
Various,	1
John Proferer,	1
At home from John Haas' milk,	1
Total,	31

Shell-fish:

None,	31

Uncooked Vegetables:

None,	28
Markets,	2
Home grown,	1
Total,	31

Ice:

Manufactured,	2
Gelwix (Wolf's Lake),	1
None,	28
Total,	31

Milk Supply.

Haas,	4
Haas and Walter and Jones,	1
Lew Smith,	3
Haas and Kessler,	1
William Miles,	1
Haas, Ed. Frommeyer and Walter and Jones,	1
Elmer Little and Jacob Smith,	1
John Miller,	2
Walter and Jones,	2
Elmer Little and Cumberland Valley Creamery,	1
Jacob Smith,	3
Haas and Schonberger,	1
Belford (private family),	1
Miller and Jones and Lew Smith,	1
Cumberland Valley Creamery, John Miller and Kessler,	1
Elmer Little,	3
Cumberland Valley Creamery,	1
John Miller and Elmer Little,	1
Haas and Bietsch,	1
D. Greenewalt and Cumberland Valley Creamery,	1
Total,	31

All of the above milk dealers with the exception of Schoenberger and D. Greenewalt, purchased milk at the creamery during the spring of 1915, so it is reported by H. H. Fogelsanger, the manager of the Cumberland Valley Creamery and Dairy Company. Walter and Jones claimed that they purchased no milk but a limited amount of cream from the creamery during 1915, and Fred Bietsch claims to have purchased no milk this year from the creamery, although the manager stated that he frequently sold him quantities of milk during the spring of the year. William Miles also stated that he never bought any milk from the creamery. John Miller, Lew Smith, Jacob Smith, John Haas and Kessler all purchased considerable quantities of milk from the creamery at numerous times in order to make up a deficiency.

The dealers supplying milk in Chambersburg are as follows:

Walter and Jones.
Fred Bietsch.
Elmer Little.
John Haas.
William Miles.
John Miller.
Davidson Greenewalt.
L. L. Brechbill.
Ed. Frommeyer.
Murvin Cook.
D. E. Stouffer.

D. E. Stouffer started his milk route on May 19, 1915, and L. L. Brechbill on about June 15th, so that the milk supplied by these dealers could have no bearing on the outbreak in question.

Among the stores and private residences in the borough from which milk is sold, the following sold milk to families in which typhoid fever cases occurred:

Jacob Smith & Son.
Kessler.
Frommeyer.
Schonberger.

During the course of the outbreak Jacob Smith and Son purchased all milk sold from the creamery, as did also Messrs. Kessler and Frommeyer. Mr. Schonberger purchased all his milk from Water and Jones, and the Belford family sold the products from one cow on the premises.

Walter and Jones are the largest dealers in the borough. They operate two wagons. The total amount dispensed daily averages approximately 350 gallons, of which 1,200 quarts are milk, the number of consumers being approximately 1,000. All the milk is bottled on the premises. This concern claims they never bought milk from the creamery for house trade but have purchased milk for wholesale distribution. It is also claimed that no milk is bought or sold on the street. They purchase milk from 23 different farmers on various farms near Chambersburg. This is all delivered to Walter and Jones' plant either by trolley or wagon. The list of the farmers from which milk is purchased is given below:

Charles Stouffer.
Jake Diller.
Aaron Witmer.
Harvey Seachrist.
Daniel Landis.
Joe Koons.
Harry Hoffman.
Pete Lehman.
Abe Lehman.
Bill Lehman.
Harvey Lehman.
Bruce Robinson.
D. L. Hoover.
Elmer Houck.
Amos Diller.
Bruce Stattler.
Charles Stattler.
Joe Stattler.
Lloyd Myers.
Bruce Shively.
Wallace Shively.
A. S. Burkholder.
E. R. Fagan.

It appears that two cases of typhoid fever developed in families using milk from this source only, although three other cases obtained milk from Walter and Jones at times.

John Haas, of South Federal Street, operates one wagon and dispenses daily approximately 240 quarts of milk to 200 families scattered all over the town. Most of the milk is supplied from cans, although a small portion is bottled. Ordinarily he purchases milk from the following farmers: Harvey Nye, Jay Miller and Noah Ebersole. It is reported that he purchased from 23 to 27 gallons per day or from 38 to 45 per cent. of the entire supply from the Cumberland Valley Creamery prior to June first, when Noah Ebersole became a source. The creamery denies this and states that he ordinarily purchased but 6 or 7 gallons per day. Five of the patients used John Haas' milk exclusively, while three others obtained milk from him at times.

William Miles, of 322 East Washington Street, has about 150 consumers and supplies from 40 to 50 gallons per day. Approximately one-half of this is bottled on the wagon, the balance being supplied from cans. He purchases his entire supply of milk from Martin Hoover, William Overcash, Charles Andrews and Amos Wagner. Both morning and afternoon milk from these farms is delivered to Mr. Miles' residence. But one case of typhoid fever occurred on this route.

Fred Bietsch, of 117 South Fourth Street, has about 600 customers and supplies from 140 to 150 gallons of milk per day. Approximately one-half is sold from cans, the balance being bottled. The great portion of the bottling is done at home. He purchases all the milk produced by the following farmers: Roy Heller, Jacob Hoover, Ed Helman, Jerry Ashway, H. W. Newman, G. W. Deardorff, P. L. Funk and A. K. Brumbaugh. The milk is delivered morning and evening to Mr. Bietsch. It is reported that he never sold milk to the creamery and that he bought none during 1915. None of the patients were among his regular customers, although one purchased milk from him at times.

Davidson Greenewalt has between 150 and 160 customers and supplies from 45 to 50 gallons. Most of this milk is bottled, nearly all at his residence. He purchases from W. R. Martin, D. H. Tritle, two neighbors, and Ira Wingert. Only once or twice was milk purchased by Mr. Greenewalt from the creamery. None of the typhoid fever patients were his regular customers, although one purchased milk from him at times.

John Miller, residing in Hamilton Township, has about 340 customers and supplies about 75 gallons per day. He purchases milk from Milton Strike, Raymond Miller, Samuel Hoffer, Frank Miller, Jesse Barnes, Harry Zillinger and Lester Young. Most of the milk is sold in bulk, the balance being bottled in his delivery wagon. Two cases were regular customers of Mr. Miller and three others obtained milk from him at times.

Elmer Little has about 150 customers and supplies 75 gallons per day. He purchases milk from Theo. Shaffer, Amos Lesher, William Kyle, Ed Huber and Claud Wingert. From five to six gallons per day are delivered from cans, the balance being bottled at home. Three cases were regular customers of Mr. Little and three others at times purchased milk from him.

Jacob Smith, of West Catharine Street, originally bought his entire supply to the amount of 30 quarts a day from the creamery. He did not deliver any milk, selling it from his premises. Three of the cases were regular customers of Jacob Smith and one purchased a part of his milk supply from him.

Lew Smith originally sold milk in Chambersburg, supplying from 10 to 15 gallons daily. This milk was purchased either from the creamery or from D. E. Stouffer. About May 10, 1915, Mr. Smith sold his business to Irvin Cook. Three cases occurred on the route of Lew Smith.

Mr. Kessler, an employe of the creamery, sells from 5 to 6 gallons of milk per day from his residence, all being purchased from the creamery. Two of the cases at times obtained milk from this source.

The Cumberland Valley Creamery, situated in a low part of the borough along the creek, handles from 15,000 to 20,000 pounds of milk per day, receiving this supply from 400 to 500 farmers. The creamery ships butter, two grades of cream and ice cream. Part of the milk is pasteurized in order that it will keep. The aim is to kill the lactic acid formers by heating to 160 degrees F. and holding at this temperature for only a few minutes. This milk is at times sold to local dealers, but ordinarily in the past warm milk has been purchased by the milkmen. Warm milk is that which is brought to the creamery by farmers living within driving distance. The following is a list of the nearby farmers delivering milk to the creamery:

J. Wadle.
Daniel B. Lehman.
Jere Harrison.
Charles Rice.
A. C. Christman.
Mrs. C. E. Keefer.
A. H. Phiel.
W. H. Grove.
W. E. Karper.

Howard Etter.
Albert Reitzel.
David A. Hawk.
H. C. Cockley.
John Barmont.
B. H. Mentzer.
John Metz.
J. W. Michaels.
S. A. Strickler.
Mrs. C. E. Ebersole.
Henry Hunsicker.
H. E. Rotz.
Denton Mellott.
C. E. Shank.
Mrs. John Killinger.
C. G. Laughlin.
George Raifsnider.
G. E. Eberly.
Wm. Barmont.
David H. Martin.
Frank Miller.
Joseph Lesher.
Clyde Coble.
George Ashway.
I. S. Sheffler.
Frank Geddes.
Harvey B. Horst.
D. B. Martin.
A. N. Pomeroy.
H. Stoner.
A. D. Holtry.

All milk purchased from the creamery by the local milk dealers was furnished by one or more of the farmers mentioned above.

Two sources of water supply are in use at the Cumberland Valley Creamery, one from the municipal system and the other from a drilled well on the premises. Water from the drilled well is used ordinarily for steaming, floor washing and other inferior purposes, although it has at times been used for washing cans, being heated prior to its use for this purpose. At the time of the investigation two samples were collected from the drilled well and analyzed at the Department laboratories, the results being as follows:

	Bacteria per c. c.	B. Coli per c. c.
No. 3 drilled well at creamery,	180,360	27
No. 4 drilled well at creamery,	22,140	360

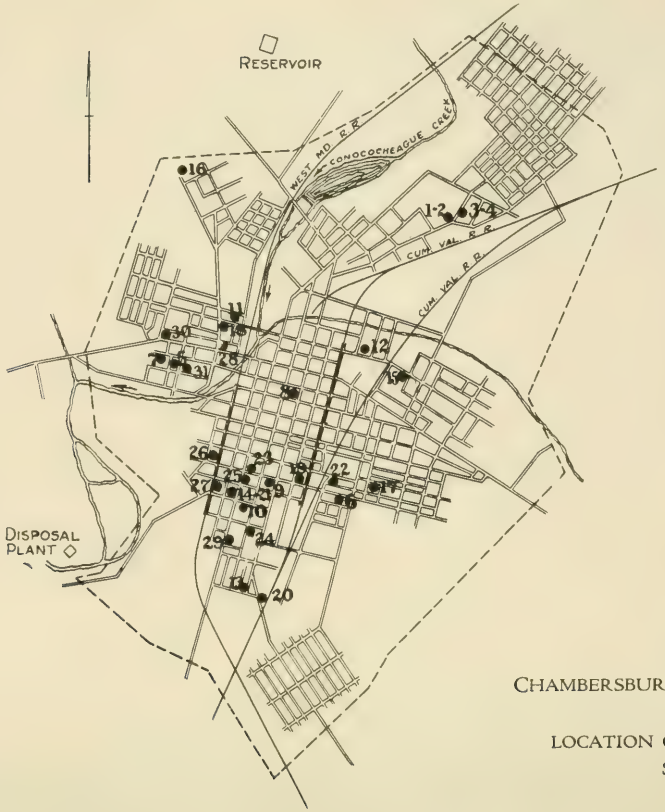
Immediately upon receipt of these results the creamery officials were notified by representatives of the State Department of Health that the water from this drilled well should be used only for inferior purposes, such as steaming and floor washing, and that it should not be used for washing milk cans or pasteurizing apparatus. Mr. Fogelsonger immediately gave his employes instructions to this effect.

Discussion.

No suspicion attaches to the public water supply, and the question as to whether or not the disease was typhoid fever was referred to the Medical Division, which has made two investigations and will prepare a report thereon.

From the fact that each and every case obtained milk from milkmen who at one time or another during the spring of 1915 prior to the outbreak purchased milk from the Cumberland Valley Creamery and because no new cases developed since June 17th, which was about 8 days after the Cumberland Valley Creamery ceased selling milk to the local milkmen, it appears that the creamery milk was in all probability the cause of the infection. As the outbreak had ceased three weeks prior to our investigation and as the routine supervision of dairy farms and milk supplies comes under the Dairy and Food Bureau of the Department of Agriculture, no attempt was made to investigate the dairy farms from which the milk was supplied.

Attached to this report is a map of the borough of Chambersburg showing the location of the various cases.



MAP OF
CHAMBERSBURG BOROUGH, FRANKLIN CO.,
SHOWING
LOCATION OF TYPHOID FEVER CASES
SPRING OF 1915.

THREATENED TYPHOID FEVER AT COATESVILLE.

Coatesville, a manufacturing town of 14,000 inhabitants, is situated in the west central part of Chester County on the Brandywine Creek, principally east of it. The creek flows southward through narrow gaps in the long, low, well-defined ridges which confine on the north and south the valley in which the town lies but up the sides of which it is gradually being extended. Along the creek there are iron and steel mills and a branch of the Philadelphia and Reading Railway. The main line of the Pennsylvania Railroad runs along the northern hillside. There is a public sewer system discharging sewage into the creek.

Water Works.

The public water supply is furnished by the municipality. The source is Sucker Run, a tributary of the Brandywine flowing into it from the valley to the west, which is devoted to farming. Along the south bank of the run in the western outskirts of the town is a small sedimentation basin and a pumping station in which are housed two pressure filters, installed as an emergency measure at the time of the epidemic of typhoid fever which occurred in Coatesville in 1912 and was traced to pollution of Sucker Run by sewage from the Coatesville Hospital, situated on the southern slope of the valley. As an additional precaution the water is dosed with chlorinated lime.

Heffner's Run is a small stream which rises in the hills north of the valley and joins Sucker Run above the water works intake. On this run about 75 feet north of the Pennsylvania Railroad tracks there is a collecting reservoir, but the pipe line from it has been shut off since the installation of the filter plant and all the water passes down the run. Part of the drainage area is inhabited and cultivated. The continuation of Main Street beyond the western limits of the city is a highway extending to the northwest, part of its route being up the eastern side of the valley of Heffner's Run. Here, in Valley Township, is a hamlet of 15 houses below the reservoir, 14 of which are on the drainage area of the run.

A private water works maintained by David Clarkson, of this hamlet, supplies water to 11 of these houses. The source of supply is a spring 200 feet north of the Coatesville reservoir, 30 feet east of the roadway and very little, if any, higher than it, in a swale in the woods. From where the spring appears a channel of loosely placed flagstones conducts the water a distance of 12 feet to a small loose-walled collecting chamber 18 inches square and covered with flagstones. A 3-inch pipe with a coarse screen over the end leads from this chamber down the roadway to the hamlet, terminating at Clarkson's home, the lowest house supplied, in a concrete trough, whence a supply is furnished a bone factory along the Pennsylvania Railroad. Samples collected on November 15 at Clarkson's water works and the Coatesville supply and examined at the Department laboratories showed the following results:

Source.	Bacteria per c. c.	B. Coli per c. c.
1. From spring—Clarkson system,	6	0
2. Heffner's Run below upper reservoir,	1,880	18
3. Pump in kitchen of Everett Palmer—Clarkson system,	22	0
4. Overflow pipe—Clarkson reservoir,	1,440	12
5. Tap, J. G. Pugh, 250 West Main St., Coatesville,	180	0
6. Raw water—Intake Coatesville pumping station,	2,700	9

Near the centre of the hamlet on the west side of the road toward the run are four houses, in pairs, owned by Fred Miller, all sewered to one cesspool at the rear of the most northern house. The southern two are brick and have inside closets. The northern two are frame and their only plumbing fixtures are kitchen sinks. There is a privy house over the cesspool. This cesspool is eight feet square and about 18 feet deep, having been built into the corner of the retaining wall which supports the yards of the houses above the ravine. No evidence was secured of sewage seeping through the outside walls.

TYPHOID FEVER ABOVE COATESVILLE WATER WORKS INTAKE.

In the northern house of the brick pair two cases of typhoid fever developed in the family of Joseph Burton,—a girl of three, onset November 4, and a boy of four, with onset November 8. A physician saw them on the 7th and 10th, respectively, and on Sunday the 14th they were removed to the Coatesville Hospital. They had been visiting at Toughkenamon about October 19.

The children had been bedfast at home and stools and other wastes had been disposed of into the inside closet. It was learned that the drain to the cesspool had been stopped up for possibly a week prior to November 15. Sewage, presumably including that from the Burton house, had made its way to the surface in an adjoining yard. A half inch of rain on November 14 probably washed some of the sewage into Heffner's Run. These conditions led J. G. Pugh, superintendent of water works at Coatesville, to appeal to the Commissioner of Health on November 14, and the Department conducted its investigation on November 15 and 16.

Remedial Measures.

The borough furnished several barrels of unslaked lime and a laborer and the lime was scattered freely about the yard where sewage had overflowed and throughout the neighborhood under the supervision of the Department's men. The cesspool for the Miller properties was disinfected with chlorinated lime and the connection from the Burton house was repaired. A general clean-up was instituted in the hamlet, including the removal of rubbish. A detailed inspection was made of these properties and written orders were issued for the abatement of all insanitary conditions. The Department had previously inspected the entire drainage area above the water works intake in order to protect the supply from pollution. It is imperative that the borough maintain a regular and frequent patrol of the area in order to see to it that sanitary conditions are maintained after they are once established. Of course, the very presence of the community so close to the stream is a menace, and will continue to be so until the situation is relieved by the introduction of the new water supply, the works for which are nearing completion.

Mr. Clarkson was instructed to undertake immediately the improvement of the water works supplying the hamlet where he lives, and this he did.

The chlorinated lime treatment of the Coatesville water supply was increased on November 13, when the borough officials first learned of the typhoid fever cases, and still more on November 15, under the supervision of the Department. About ten pounds of chlorinated lime had been used in a day, and this was increased to 15 pounds and then to 20 pounds. The consumption is from 1,000,000 to 1,250,000 gallons of water daily.

At the time of the investigation there were six cases of typhoid fever in the Coatesville Hospital, admitted, two in October, one on November 11, the two Burton children on November 14, all the above from Coatesville or vicinity, and one case on November 13 from Russell's Mill. The records of the Coatesville board of health show two cases in August and one in September.

No cases in Coatesville followed the condition above the intake described in this report. The dangerous condition of the water supply has been so emphasized both by the orders of the Department and by the typhoid epidemic of 1912 that the chemical disinfection has been pretty carefully looked after by the local officials. The Department has inspected the plant frequently.

TYPHOID FEVER AT EVERETT AND VICINITY.

Twenty-two cases of typhoid fever developed from May to September in Everett Borough, and in the neighboring settlement of Earlston, West Providence Township, all in Bedford County. Upon the Department being advised of the condition the undersigned assistant engineer made an investigation at the beginning of October.

General Conditions.

The borough of Everett has a population of 1,800 and lies in the Allegheny Mountains in the east central part of Bedford County on the Huntingdon and Broad Top Mountain Railroad. The Raystown Branch of the Juniata River flows easterly along the southern border and the town lies principally on the low lands along the northern bank, and for a mile up the west bank of Bloody Run, a tributary from the north. Tussey Mountain just west of the borough rises to an elevation of 2,100 feet, 1,000 feet above Everett. Along the base of the mountain in the valley of Bloody Run are scattered groups of houses.

The tannery of the Elk Tanning Company which operated in the northern part of the borough until 1908 was responsible for these settlements, together with old-time iron ore mines. There is now a large iron works a mile west of Everett near Earlston and it draws employes from the former.

The principal local industry is the Cottage Planing Mill, operating the mill proper, a three-story reinforced concrete structure, and also the "pin mill," a frame structure where insulator pins are made.

Sewerage.

Everett is pretty generally sewered, but there have been no recent extensions so far as is known. There are three outlets into the river. There are also two public sewers and numerous private ones discharging into Bloody Run, and along the run there are numerous overhanging privies.

Water Works.

The Everett Water Company serves about two-thirds of the population of the borough. The houses along the foot of Tussey Mountain are too high to be served. There are about 85 dug wells in use. The lower ones at least are largely in limestone, for it outcrops along the eastern side of Bloody Run ravine and also is prominent in the base of Tussey Mountain to the west.

The water company's principal source, the only one used continuously, is derived from an abandoned mine tunnel which extends into the main ore body at a point near Williams Run, a short distance up the slope of Tussey Mountain west of the borough. A hole was drilled from above into the tunnel at a point where it has a rock roof about 30 feet below the surface and here a dam was formed, grout being poured through the hole. Farther up the slope a second hole was drilled and cased. The water rises through this drill hole and is led by a 6-inch iron pipe into a nearby 40,000-gallon concrete reservoir from which it flows by gravity to the distributing system.

The Tatesville auxiliary supply is derived from an abandoned mine tunnel at the base of Tussey Mountain near Tatesville about two miles up Bloody Run valley. The tunnel caved in long ago and the water issues from it and is conducted by a concrete and rubble lined channel 100 feet long and containing eighteen one-foot-high steps for aeration and flows into a small sedimentation basin and thence to an open pump well at a pumping station. From here a twenty-five horse-power oil engine and pump raise the water through 11,000 feet of 6-inch wooden pipe to a 150,000-gallon open concrete reservoir on Everett Summit. This is east of Bloody Run and just north of the borough. The water flows by gravity to the distributing system.

Big Limestone Spring is the only other source of the water company and is used only as an auxiliary supply. It rises at several points in the bottom of a concrete lined basin of 100,000 gallons capacity just north of East Fourth Street along the east bank of Bloody Run. The basin is partly in rock excavation and the western side is retained by a stone wall washed on the outside by the waters of Bloody Run. Normally the water in the basin is about six feet above the bed of the run, from which there is adequate protection. The water is pumped directly into the distributing system. There is a 900,000-gallon equalizing and distributing reservoir not yet mentioned on Warrior Ridge in the southwestern part of the borough.

In 1905 a well was drilled 501 feet deep just across Bloody Run from the Big Limestone Spring. Water was raised by compressed air, but the quantity was insufficient to justify equipment and operation cost and the well was abandoned and dismantled a few years later. Limestone was encountered at a depth of 16½ feet and continued to a depth of 490 feet.

Formerly an additional supply was piped into Big Limestone Spring basin from Bloody Run Spring, which discharges about 400 feet up Bloody Run on the "pin mill" premises. Suspicion attached to the quality of the water and in 1912 a bacteriological examination by the Department's laboratory of a sample from Bloody Run Spring revealed colon bacilli, and in accordance with an order of the Department the spring was disconnected from the water company's system, one of the connecting pipes being severed and a second one being plugged with cement mortar. At the same time a temporary plant was installed to treat with a chemical germicide all water pumped from Big Limestone Spring.

Bloody Run Spring becomes turbid after heavy rain. In 1912, the tannery vats up the valley were turned into Bloody Run, and it is reported that a few hours later Bloody Run Spring was discolored with tan liquor to almost the same degree as the run. The Department's investigation revealed Bloody Run as a small stream in the northern part of the borough, but several hundred feet above the spring the surface stream had entirely disappeared.

Bloody Run Spring is enclosed by a concrete structure 6 feet by 8 feet by 6 feet high with a concrete roof. It is nearly concealed by a large pile of waste lumber. The ground around the spring has been allowed to become higher than the entrance to the spring so that surface water from the immediate vicinity washes into the enclosure.

The "pin mill" gets its water supply from Bloody Run Spring. A 2-inch pipe line from the enclosure leads underneath the boiler room where there is a connection to the boiler feed pump and to a tap, and past the stables where there is a connection to supply a watering trough. The pipe continues to Big Limestone Spring, but is plugged. The employes drink water drawn from the tap in the boiler room or dipped from the spring in a bucket.

The Cottage Planing Mill is along the north side of West Third Street, the southern part of the building being on filled ground where there was once a ravine. Water is obtained from two springs. The upper one is about 40 feet above, that is, west of the building, and has been developed at a depth of 15 feet, there being

no evidence of it at the surface. The water is piped through a 4-inch tile pipe into the central portion of the basement, where a 24-inch terra cotta pipe has been placed with its top projecting two inches above the concrete floor of the basement. An overflow pipe maintains a depth of approximately two feet of water in the 24-inch tile and leads to the lower spring structure, situated about forty feet east of the planing mill. A hand pump on the second floor of the planing mill draws water from the 24-inch tile in the basement. The waste water from the pump is conducted through a 2-inch galvanized iron pipe back into the 24-inch tile and overflows to the lower spring. The waste pipe and the suction pipe are parallel to and within a few inches of each other.

The structure built over this lower spring is entirely underground and consists of a reinforced concrete basin 8 feet by 14 feet in plan with an arched roof. Water accumulates in it to a depth of 6 feet. A manhole in the roof communicates with the surface of the ground through two lengths of 24-inch terra cotta pipe. The top of the terra cotta pipe is flush with the surface of the ground and is provided with a cast-iron manhole cover. At the time of the Department's inspection the edge of the terra cotto pipe had been broken away to a point about two inches below the surface of the ground, thus admitting surface wash at times of heavy rains.

This spring is said to be near the line of the bottom of the old ravine, about at the head of which and 300 feet to the southwest is the railroad station. Here in 1908 a new cesspool was constructed by building up a crib work of railroad ties in the low ground of the ravine and filling around it with cinder and ashes to a total depth of 15 feet. The lower side of the fill is retained by the stone wall of coal pockets at a railroad siding. The slope from here to the mill and lower spring is quite steep.

From this spring basin a 2-inch suction line extends northward to the power plant. The water is pumped directely into the boilers by a small boiler-feed pump. A one-half inch spigot has been placed on the discharge from this pump in the boiler room. The employes drink water pumped from the sump in the basement or drawn from the boiler feed pump spigot in the power house, from which the hand wheel was removed on September 16th.

TYPHOID FEVER IN EVERETT.

The census data collected upon the ten cases of typhoid fever which occurred in Everett from May to the end of September are the basis of the following tables:

Date of Onset.	No. of Cases.	Date of Onset.	No. of Cases.
May 15.	1	August 5.	1
June 3.	1	August 23.	1
June 23.	1	August 30.	1
July 15.	1	September 13.	1
July 31.	1	September 28.	1
		Total.	10

Age Period.	Number of Cases.			Age Period.	Number of Cases.		
	Male.	Female.	Total.		Male.	Female.	Total.
10-14,	--	1	1	35-39,	1	--	1
15-19,	1	--	1	40-44,	1	--	1
20-24,	1	--	1				
25-29,	2	1	3				
30-34,	2	--	2	Total,	8	2	10

Source of Water.	No. of Cases.
Bloody Run Spring and Planing Mill.	1
Planing Mill.	2
Planing Mill and Water Company.	3
Planing Mill and Water Company and well.	1
Summary of use of Planing Mill water,	7
Water Company and well,	2
Well,	1
Total,	10

Milk Supply.	Number of Cases.
Buzzard,	3
Preston Dishong,	1
Covalt,	1
Horton,	1
Grocey,	1
Union Hotel,	1
Condensed,	1
Not learned,	1
Total,	10

Ice Cream Supply.	Number of Cases.
Evans,	5
Evans and others,	2
Evans and hotel,	1
Various,	1
Not learned,	1
Total,	10

Shell-fish, fresh vegetables and ice had been used by so few of the patients that they could not have had any bearing upon the occurrence of typhoid fever. The ice cream manufacturer who supplied practically all the cases is the only manufacturer in a population of 2,000, and careful inquiry did not disclose any typhoid history among those handling the cream or among the farmers supplying it.

Seven of the ten cases were employes of Mr. George H. Gibbony, the proprietor of the Cottage Planing Mill and the "pin mill." Suspicion rested upon the water supplies of these places. No knowledge was gained of any recent occurrence of typhoid fever above any of the several sources of these water supplies.

The first case, antedating the next one by nineteen days, was that of a teamster who had been engaged in hauling fire wood from the waste pile at the "pin mill" to the planing mill, a distance of about four city blocks. He got his load within 20 feet of Bloody Run Spring and drank this water mostly. At morning, noon and night he drank at the watering trough at the stable, also supplied from Bloody Run Spring.

This man having recovered from the attack of typhoid fever returned to work June 10th, after the onset of the second case of typhoid, but thirteen days before the third case, and subsequently he drank at the pump on the second floor of the planing mill from which the waste water returns to the pump sump and lower spring. He may have unconsciously contaminated this waste water. He also drank at the spigot in the planing mill power house.

On the other hand the pump sump and the lower spring at the planing mill are open to contamination which may have come from other sources. It rained April 27th, 28th and 29th, sixteen days before the first case; also May 20th and 24th, ten to fourteen days before the second case; also June 1st, 3rd and 14th, nine to twenty-one days before the third case; but very little before each of the subsequent cases according to local rainfall records. Also it should be noted that no cases occurred later than twelve days after the hand wheel was removed from the spigot in the planing mill power house, the supply for which is pumped from the lower spring, the only one which might possibly be contaminated by the station cesspool.

The three cases not among employes of Mr. Gibbony were probably secondary, two from another case within the household and the other one through fly infection from insanitary disposal of wastes from a neighboring property.

The public water supply, milk and ice cream supplies seem above suspicion. The spring supplies appear to be responsible, however the infection may have gotten into them, or one of them.

Mr. Gibbony was instructed to clean out and disinfect the spring basins at the planing mill to the satisfaction of the county medical inspector, a resident of Everett, and to disconnect the waste pipe from the pump sump. Also the following letter was sent him about Bloody Run Spring:

"October 11, 1915.

"Mr. George H. Gibbony.
"Everett, Pa.

"Dear Sir:—

"The results of analyses of samples of water taken from Bloody Run Spring at the pin mill on your property in the borough, shows the presence of organisms of sewage origin.

"Water from this spring is unsafe for use either for drinking purposes or for domestic uses. Unless improvements of a permanent character can be made to protect the waters from contamination the spring should be abandoned as a source of drinking water.

"Very truly yours,

"SAMUEL G. DIXON."

The following letter was sent to the Everett Board of Health:

"October 9, 1915.

"Mr. E. E. Bowen,
"Secretary Board of Health,
"Everett, Pa.

"Dear Sir:—

"There is an overflowing privy on the premises in Everett owned by Joseph Crawford and occupied by Martin Dishong. There has been considerable typhoid fever on these premises. Will you please see that this privy is cleaned out at once, the contents thoroughly disinfected by mixing with a sufficient quantity of lime and then destroyed by incineration or burying at some point remote form streams, springs, wells or any sources of public or private water supply. Also, excrement from the sick room of Rex Cribs, suffering with typhoid fever, boarding with George Pee in a house owned by George Weaverling, is simply dumped onto an ash pile in the back yard. There is no evidence that this excrement is properly disinfected. Will you please see that the instructions for disinfection contained in the circular left by this Department's representative at the house are carried out and that the excrement is buried in a hole dug in the ground, in accordance with the Department's regulations.

"Please give me a report on this matter at en early date.

"Yours very truly,

"SAMUEL G. DIXON."

There is no telling what proportions the epidemic might have reached if the borough had not been required by this Department, in 1912, to abandon and disconnect Bloody Run Spring from the public water works.

EARLSTON VILLAGE.

The other twelve cases censused in the vicinity occurred in Earlston Village, West Providence Township, Bedford County, across the river from Everett. The community has a population of 400. Water is obtained from wells and springs in the underlying limestone formation. Drainage is into the river or into small tributary runs. Privies are in common use.

There is an old log spring-house along Hollar Run in the village. The spring is of limestone origin and the water level within the spring basin is several inches lower than the run, which the outlet joins some little distance below. About seven families habitually dip all their drinking water from this spring. A public highway crosses the run about 50 feet up-stream and wayfarers use the spring. There is said to have been a typhoid fever case a little earlier in the summer in the area drained by Hollar Run, and another in 1914. At the Earlston Planing Mill there is a spring which has been improved by sinking a 24-inch tile within which the water rises. The top is level with the ground so that surface wash may enter and only a small board cover is provided.

TYPHOID FEVER AT EARLSTON.

Census data colected upon the twelve cases of typhoid fever occurring at Earlston are the basis of the following tables:

Date of Onset.	Number of Cases.	Date of Onset.	Number of Cases.
July 22,	1	Sept. 1,	1
Aug. 6,	1	Sept. 5,	1
Aug. 7,	2	Sept. 7,	1
Aug. 8,	1	Sept. 12,	1
Aug. 16,	1		
Aug. 22,	1		
Aug. 26,	1	Total,	12

Age Period.	Number of Cases.			Age Period.	Number of Cases.		
	Male.	Female.	Total.		Male.	Female.	Total.
5-9,	--	1	1	30-34,	--	1	1
10-14,	2	2	4	50-54,	--	1	1
15-19,	--	3	3				
20-24,	1	1	2	Total,	3	9	12

Source of Water.	No. of Cases.
Hollar Spring, Earlston Planing Mill Spring, etc.,	2
Hollar Spring and Earlston Planing Mill Spring,	2
Chamberlain Spring and vacation,	2
Everett Water Co., well, etc.,	2
Mallott well,	1
Wells,	2
Spring,	1
Total,	12

Milk Supply.	No. of Cases.
J. Foor (a), J. Foor (b*), and B. A. Barton,	4
J. Foor (a),	3
Summary of J. Foor (a) milk,	7
Mallott,	2
Own cow,	2
Own cow and vacation,	1
Total,	12

*Different person and milk supply from (a).

Ice Cream.	No. of Cases.
Evans,	5
Evans and Bedford,	2
Various,	1
Home made,	4
Total,	12

Vegetables used by the typhoid fever patients were from home gardens. Ice was little used and shell-fish not at all. The only ice cream manufacturer in the community furnished most of this product, as was the case at Everett. These four items are not considered as having been responsible for the occurrence of typhoid fever.

The first, second, fourth and fifth cases, all in one family, used water from the old Hollar Spring described above and also from the spring at the Earlston Planing Mill. At least the first case may have been infected from one of these springs. The well on this property was so filthy that it necessitated carrying water. Sanitary conditions about the house were bad. The mother, the first case, antedated the others by two weeks or more and they may easily have been secondary. She visited three families outside of the village prior to her illness, but did not know of any typhoid fever among any of them.

Milk was brought to the above family during the course of the disease by some member of the John Foor (a) family. The milk was delivered as an act of kindness, the can being taken by one of the stricken family into the house, emptied and returned to the bearer. All other customers called for their milk. John Foor (a) also supplied milk to the Smith family, in which a case occurred on September 3rd, a child nine years of age. On September 5th and 12th, respectively, two cases occurred in the Foor family itself. It seems, therefore, that the Foor milk was the means of conveying the infection to three persons. Foor kept but two cows and supplied a few neighbors.

Two cases, the 3rd and 6th, were probably imported, both having associated with typhoid fever patients in the early course of the disease while on a vacation trip.

As to the source of infection of the three remaining cases no conclusive evidence was gained. The eleventh case, a ten year old boy, assisted a cattle drover and drank at many places throughout the county. Typhoid fever is said to have been endemic in the community. This is not to be wondered at considering the nature and conditions of several springs which are freely used and two of which have been described. The stamping out of the disease can only be accomplished when the inhabitants come to appreciate the danger of using water supplies which are open to contamination. The danger of using the Hollar Spring especially is no secret. Everett is indeed fortunate in having a reasonably good public water supply in this community where there are so many dangerous sources. There is no evidence of any connecting link between these cases at Earlston and the cases at Everett.

Instructions were given John Foor (a) and his family to boil all milk containers, especially during the time that typhoid fever was present in the community among those who either use the milk or handle it.

EVERSON DYSENTERY OUTBREAK.

In accordance with instructions I investigated an outbreak of dysentery which occurred in Everson, Fayette County, and vicinity during the late summer of 1915. Dr. O. R. Altman, medical inspector of Fayette County, and Sanitary Inspectors Charles W. Collins, Jacob Holtzman and D. M. Irwin assisted in the investigation.

I have the honor to submit the following report:

General Conditions.

The borough of Everson, having a population of about 1,900, is situated in the northern part of Fayette County, just east of and across Jacobs Creek from the borough of Scottdale, Westmoreland County, having a population of about 6,000. The two form a single industrial community dependent upon the coal in the locality, the manufacture of coke and various iron and steel industries. The two towns are connected by a highway bridge owned by the West Penn Railways, an electric interurban joining all points of the Connellsville coke region and running from Greensburg to Brownsville. The Southwest Branch of the Pennsylvania Railroad and the Mt. Pleasant Branch of the Baltimore and Ohio Railroad also pass through Everson along Jacobs Creek.

Scottdale and Everson are fairly well provided with sewers, which discharge into Jacobs Creek. This stream rises in the northeastern corner of Bullskin Township, Fayette County, crosses the county line into Westmoreland County, thence makes a curve around to Laurelville and forms a boundary line between Westmoreland and Fayette Counties from this place to Jacobs Creek, where it empties into the Youghiogheny River. The main stream is about 25 miles long and drains an area of approximately 90 square miles, the drainage area above Scottdale and Everson comprising about 57 square miles. The stream is greatly contaminated with mine drainage.

The public water supply in Scottdale and Everson is furnished by the Citizens Water Company of Scottdale. The supply is obtained from three surface sources located on the west slope of Chestnut Ridge about 5 miles east of Scottdale, namely, Greenlick Run, Mounts Run and the South Branch of Spruce Creek. Prior to the year 1909, the entire supply of the Citizens Water Company was derived from these local sources, but since about the first of that year water from the Indian Creek supply of the Mountain Water Supply Company has at various times been introduced into the distribution system of the Citizens Water Company. It appears that the supply from Indian Creek was most recently used during the summer of 1914. All of these supplies are being treated with a solution of hypochlorite of lime before being supplied to the public.

Dysentery and Typhoid Fever.

The public authorities in Everson have been negligent in reporting typhoid fever cases to this Department and the records are most incomplete. The Department's record of typhoid morbidity in Scottdale since 1905 is as follows:

Year.	No. of Cases.
1905,	23
1906,	27
1907,	51
1908,	17
1909,	20
1910,	78
1911,	15
1912,	11
1913,	11
1914,	31
1915,	14

The Department's investigation of the outbreak in the summer of 1914 led to the suspicion that probably the introduction of Indian Creek water was responsible for the majority of the cases.

During the Department's investigation in the summer of 1915, 7 cases of typhoid fever, 4 being in Scottdale and 3 in Everson, and 104 cases of dysentery were censused. The distribution of the dysentery cases was as follows:

Everson 76; Upper Tyrone Township, Fayette County, 11; Bullskin Township, Fayette County, 7; Scottdale 8; and East Huntingdon Township, Westmoreland

County, 2. The census data relative to these cases are the basis of the following tables:

Date of Onset.	Number of Cases.	Date of Onset.	Number of Cases.	Date of Onset.	Number of Cases.
July 27,	1	Aug. 29,	3	Sept. 22,	4
28,	1	30,	4	23,	1
Aug. 1,	2	31,	4	24,	2
4,	1	Sept. 1,	6	25,	1
5,	1	5,	2	27,	1
6,	2	6,	2	28,	1
7,	2	8,	1	29,	1
16,	4	10,	5	30,	4
14,	3	11,	3	Oct. 1,	1
15,	3	12,	3	3,	1
16,	1	13,	1	4,	1
17,	1	14,	2	6,	1
18,	2	15,	1	7,	1
20,	2	16,	1	8,	1
21,	1	17,	1	10,	3
25,	4	18,	3	11,	2
26,	1	19,	1	14,	1
27,	4	20,	2		
28,	2	21,	1	Total,	111

Age Period.	Number of Cases.			Age Period.	Number of Cases.		
	Male.	Female.	Total.		Male.	Female.	Total.
1,	4	9	13	25-29,	9	5	14
2,	4	6	10	30-34,	7	5	12
3,	5	0	5	35-39,	0	3	3
4,	2	3	5	40-44,	3	4	7
5-9,	6	6	12	45-49,	1	2	3
10-14,	2	3	5	50+	3	2	5
15-19,	3	3	6				
20-24,	9	2	11	Total,	58	53	111

Source of Milk Supply.	No. of Cases.
McCoogan,	13
Condensed,	12
Own cows,	11
None,	8
Unknown,	6
Two dealers, 5 cases each,	10
Two dealers, 4 cases each,	8
Four dealers, 3 cases each,	12
Eight dealers, 2 cases each,	16
Fifteen dealers, 1 case each,	15
Total,	111

Ice Cream Supply.	No. of Cases.
None,	84
Five different supplies,	27
Total,	111

Ice Supply.	No. of Cases.
None,	86
Scottdale Ice Company,	9
Unknown,	4
Two dealers, 3 cases each,	6
Two dealers, 2 cases each,	4
Two dealers, 1 case each.	2
Total,	111

Meat Supply.	No. of Cases.
Kane,	40
Stachowski,	23
None,	18
Unknown,	14
Various,	8
Three dealers, 2 cases each,	6
Two dealers, 1 case each,	2
Total,	111

Use of Uncooked Vegetables and Fruit.	No. of Cases.
Various stores and hucksters,	38
None,	30
Own garden,	15
Unknown,	11
Six separate supplies,	17
Total,	111

Shell-fish.	No. of Cases.
None,	108
Yes,	3
Total,	111

Water Supply.	No. of Cases.
Citizens Water Co. of Scottdale,	101
Citizens Water Co. and various supplies,	7
Distilled water,	2
Dug well,	1
Total,	111

The household distribution of the cases was as follows:

54 houses, one case each,	54
18 houses, 2 cases each,	36
7 houses, 3 cases each,	21
Total,	111

From a study of the cases it appeared that probably at least 25 were secondary infection.

By referring to the tabulation of the distribution of cases by age periods it will be seen that 45 or over 40 per cent. of the cases were less than 10 years of age. This fact led to the suspicion that milk was the transmissive agent responsible for the majority of the cases. However, a careful study of the milk supplies used did not sustain this hypothesis. It was found that 31 of the cases either did not use milk or used condensed milk or a supply from their own cows. The largest number of cases using one milk supply was 13; the next largest number was 5. In the family of the dealer supplying 13 cases there were 3 cases of dysentery, the

earliest of them antedating all but 2 of the 13 cases. However, 5 of these 13 cases may have been secondary infection from the previous cases in the households. This milk supply could not have been the common cause of the outbreak, but may have been a contributing factor responsible for several of the cases. Upon learning of the conditions at the dairy farm the proper precautions were taken to prevent any possibility of infection being further transmitted through this agency. At this dairy farm, which is located on the outskirts of Everson, sewage was discharged through a private sewer and flowed over the ground surface for 100 yards or more to a small stream tributary to Jacobs Creek. Upon notification to abate this pollution the owner of the property promptly installed a cesspool. This discharge of infected sewage presented an argument for the possibility of fly infection. However, the direction of the prevailing winds, the location of the property on the outskirts of the borough and the geographic distribution of the cases did not fit in with this theory.

A careful investigation was made of the bread and meat supplies in the vicinity, but it disclosed nothing to justify any suspicion of either of these food supplies as a responsible transmissive agent.

The public water supply in Scottdale and Everson is derived from the same sources. Had this water supply been the transmissive agent responsible for the outbreak it would be logical to expect that the greater number of the cases would occur in Scottdale, which has about three times the population of Everson. However, only a small percentage of the cases occurred in Scottdale. As precautionary measures the treatment of the public water supply with hypochlorite of lime was checked up and the system thoroughly flushed. Thirty-nine samples of the public water supply were secured during September and October, 1915, from various points throughout the distributing system and analyzed at the Department laboratories. While the results of analyses showed high total bacterial counts in several instances, B. coli was not present in any sample.

Probably a considerable percentage of the cases censused were suffering from usual summer intestinal disturbances, but were reported as having dysentery owing to the attention being given the matter.

Privy vaults were used for the disposal of stools and urine from about one-half of the cases. Owing to this fact and that kitchen waste and wash water from many properties were discharged into street gutters, it appeared that transmission of the infection by flies probably occurred to some extent.

A careful study of all the data secured during the investigation failed to reveal any clue to justify suspicion being directed to any one food or water supply as the transmissive agent responsible for the majority of the cases of the outbreak. It appeared probable that for the most part the infection was transmitted by McCoogan's milk, by flies and by contact.

TYPHOID FEVER OUTBREAK IN GALLITZIN BOROUGH, CAMBRIA COUNTY.

On October 5, 1915, the Department learned of an outbreak of typhoid fever having occurred in the borough of Gallitzin. Fourteen cases from June to October, inclusive, were ultimately reported and investigated. The undersigned assistant engineer started for Gallitzin on the evening of October 5th to investigate and report the existing conditions and take such remedial steps as might be determined upon. The investigation occupied October 6th and 7th.

General Conditions.

Gallitzin is a town of 4,000 inhabitants in the bituminous coal fields. The western ends of the tunnels of the Pennsylvania Railroad at the summit of its line across the Allegheny Mountains are within the borough limits, which also include several mine slopes. The municipal area is nearly a square mile divided into three parts by the east and west bound rights of way. The central part is the business district and the northern part is the principal residential section. The borough includes the watershed line between the head waters of Clearfield Creek, a tributary of the West Branch of the Susquehanna River, on the north, and Sugar Run, a tributary of the Frankstown Branch of the Juniata River, on the south.

Sewerage System.

Gallitzin has a combined sewer system which serves nearly its entire area and discharges in the extreme western end of the borough into Dawson Run, a tributary of Clearfield Creek. The collecting system is approximately four miles in length and varies from 6 inches to 4 inches in diameter.

A permit was issued to the borough on September 30, 1914, by the State Department of Health, requiring plans for a sewage treatment plant to be submitted for approval on or before September 30, 1915. This requirement has not been complied with.

It is worthy of note that although the sewer system reaches all portions of the borough, the use of outside privies prevails very extensively especially in the northern section. These privies though connected with sewers are in all cases without means of flushing. The result is a decidedly insanitary condition on many properties, the owners or tenants feeling that since their privies are connected with the sewers further attention to them is unnecessary. This lack of attention has resulted in many full and overflowing privies. It is significant at least that the present epidemic was confined exclusively to the northern section of the borough.

Water Works.

Water is at present supplied in the borough of Gallitzin by the Cambria County Water Supply Company. The source of supply consists of a dug well and a small reservoir about two miles to the northwest of the borough. The watershed above the reservoir has but three dwellings on it and about four miles of highway. An inspection made as part of the typhoid fever investigation showed that one of the three properties in the drainage area, occupied by a family named Lynch, had been allowed to get in a wretched sanitary condition. This property is about one and a half miles above the intake. From this reservoir a 6-inch pipe extends to the No. 10 mine of the Pennsylvania Coal and Coke Corporation, where the water is pumped into a 4-inch distributing line on Forest Street in the northwestern portion of the town. Any excess water passes to a circular masonry reservoir having a capacity of about 600,000 gallons and located in Gallitzin township about 1,000 feet beyond the northeast corner of the borough.

The flow from the stream furnishes this supply is entirely inadequate, even though augmented by the flow of the above-mentioned well, and since 1907 it has been necessary for the Cambria County Water Supply Company to purchase water from the Summit Water Supply Company in order to meet the needs of the borough.

At present the Summit Water Supply Company is thus supplying those parts of the borough south of the west bound track of the Pennsylvania Railroad, the business district and southern section, while the Cambria County Water Supply Company has been endeavoring to fulfill the needs of the residents north of the west bound track of the Pennsylvania Railroad. However, for the greater portion of the past summer the higher parts of this region have been entirely out of water. Until October the 6th the distributing reservoir to the northeast of the borough was entirely empty, while the collecting reservoir has had no storage in it since last March.

The source of supply furnished by the Summit Water Supply Company is chiefly the South Fork of the Little Conemaugh River, although Bear Rock Run and Beaver Dam Run can be delivered to the borough. A main from South Fork dam extends northeasterly to a 40,000-gallon masonry reservoir in Gallitzin, about fifteen miles distant from the dam. For six and a half miles from the dam the pipe line is 16 inches in diameter and the remainder is 12 inches in diameter. From the reservoir Gallitzin is supplied by gravity through a 6-inch pipe.

Bear Rock Run rises five miles south of Gallitzin in Washington Township, Cambria County, and near Lilly. The drainage area above the impounding reservoirs is 1.6 square miles, on which there is but one occupied property. The water is supplied to the railroad yards and a number of houses belonging to the Pennsylvania Railroad in Gallitzin. Several times a temporary connection has been used to furnish water from Bear Rock Run to that part of the distributing system in Gallitzin supplied from South Fork dam.

Typhoid Fever.

The past typhoid fever records of cases in Gallitzin so far as the borough authorities have reported are as follows:

	1912	1913	1914	1915		1912	1913	1914	1915
January,					August,	1	1		2
February,		2			September,		3	1	7
March,					October,				3
April,					November,	1			
May,	2	1			December,	1	1		
June,		1							
July,		2		2	Total,	5	11	1	14

Typhoid Fever in 1915.

The data relative to fourteen cases of typhoid fever investigated by the Department's officer are the basis of the following tables:

Date of Onset.	Number of Cases.	Age Period.	Number of Cases.		
			Male.	Female.	Total.
June 28,	1	0-4,	0	0	0
July 12,	1	5-9,	3	2	5
August 5,	2	10-14,	1	1	2
September 3,	1	15-19,	0	0	0
September 20,	1	20-24,	1	1	2
September 23,	1	25-29,	4	0	4
September 24,	1	30-34,	0	1	1
September 25,	3				
October 7,	1				
October 19,	1				
October 22,	1				
Total,	14	Total,	9	5	14

Source of Milk Supply.	Number of Cases.	Occupation.	Number of Cases.		
			Male.	Female.	Total.
Pringle,	2	At home,	0	2	2
Masadowski,	3	At school,	3	3	6
Tounik,	1	Grist mill teamster,	1	0	1
Russian,	2	Miner,	3	0	3
Various,	1	Miner and on railroad work train,	1	0	1
Own cow,	3	Laborer,	1	0	1
None,	2				
Total,	14	Total,	9	5	14

Water Supply.	No. of Cases.
Cambria County Water Supply Company,	11
Cambria County Water Supply Company and various,	2
Well,	1
Total,	14

The vegetables used by those who developed typhoid were obtained in most instances from their own gardens and not from any common source of supply. Some of the patients denied having used any raw vegetables. Two had obtained them from the company store. It was not considered that vegetables, fruits, shell-fish or other foodstuffs had any bearing on the outbreak of typhoid fever.

The milk supplies were thoroughly investigated, revealing that none of the dealers had any previous typhoid history and that no suspicion attached to the milk as a probable factor in the typhoid outbreak.

The cases were grouped rather close together, all except the tenth and twelfth in sequence of onset being within 600 feet of the first two cases, and all of them occurred in the northern section of the borough. This is the section which was being supplied with water by the Cambria County Water Supply Company entirely from its own source, the surface water intake and dug well northwest of the borough, whereas the other parts of the town were supplied from another source. Moreover, all but one of the cases admitted having drunk of this public supply, and this one may be logically set down as of secondary infection within the household.

The investigation of the drainage area furnishing this supply revealed that a son of Lynch had typhoid fever in Ashville, Cambria County, sometime in August, and after his recovery visited his father's home early in September. There was a heavy rain in this district September 4th and 5th.

Discussion.

The case of typhoid fever on an insanitary property above the intake of one of the public water supplies and the subsequent heavy rain may have been responsible for the cases which developed in a group toward the end of September in the district receiving this water supply. It is impossible to say whether there may have been an undiscovered earlier infection of the water supply, responsible for the first cases, or whether these were infected in other ways.

The first case in the outbreak in Gallitzin was the teamster, who drank water promiscuously wherever his duties called him throughout the surrounding country. The proximity of the succeeding cases and their straggling sequence point to the season of the year, the abundance of flies, the insanitary conditions and the lack of use of disinfectants in connection with the care of the patients' wastes, clothing and eating utensils in almost all instances as likely factors in the spread of the disease.

Secondary infection within the household may have been responsible for four of the cases. They followed other cases in these houses at intervals about equal to the incubation period, and proper precautions in nursing the early cases had not been observed.

Remedial Measures.

A temporary chlorinated lime disinfecting apparatus was installed in the pump house of the Pennsylvania Coal and Coke Corporation at No. 10 mine, where the water from the intake of the Cambria County Water Supply Company is pumped to the distributing reservoir. The installation was made under the supervision of the Department's officer, and the water was dosed at the rate of twelve pounds of chlorinated lime per million gallons. The following letter was sent to the water company:

"November 18, 1915.

"Cambria County Water Supply Co.,
"Cresson, Pa.

"Gentlemen:

"Confirming instructions given your company by an officer of this Department during an investigation of the typhoid fever outbreak in Gallitzin Borough, I wish to say that this Department believes it necessary for you to maintain the apparatus for the addition of a chemical germicide to the water supplied to the public in continuous operation until such time as more permanent measures for the protection or purification of the supply can be inaugurated. This communication refers to the temporary apparatus now in service in the pump house of mine No. 10, Pennsylvania Coal and Coke Corporation.

"Trusting that you will give the operation of this apparatus your careful attention, I am

"Very truly yours,
"SAMUEL G. DIXON."

A permanent abatement of the insanitary conditions at the Lynch property on the drainage area of the Cambria County Water Supply Company may be expected at an early date under an order from this Department.

Instructions were given the superintendent of the Pennsylvania Coal and Coke Corporation, which owns most of the houses occupied by the patients in this epidemic, to thoroughly clean the various premises in the typhoid infected region, using chloride of lime freely. Verbal instructions were also given to the president of the board of health in regard to the cleaning up of the infected region.

A permit was issued to Gallitzin, March 25, 1915, for a municipal water works system, approving in a general way the preliminary plans submitted by the borough subject to its acquiring legal right to Sugar Run, the proposed source of supply. The use of this stream by Gallitzin has been opposed by the city of Altoona on the ground that it has already appropriated Gum Tree Run, of which Sugar Run is a tributary. The matter is in the courts pending settlement.

TYPHOID FEVER AT HAMBURG.

The borough of Hamburg is a thriving manufacturing community situated in the north central part of Berks County on the east bank of the Schuylkill River, with a population estimated at about 2,400. There are twenty-five iron and steel mills, knitting mills, silk mills, etc., employing from eleven to one hundred hands each, a total of about five hundred employes.

The town is built upon a comparatively level section of land lying in a bend of the Schuylkill River. Extending along the entire front of the borough is the Schuylkill Canal, which receives surface drainage and sewage from the town either direct or by way of three small streams known as Mill Creek, Lower Mill Creek and an unnamed stream.

Hamburg has no sewerage system, but there are numerous private sewers in the borough discharging either into the canal or to the street gutters or highways. In 1908 the Department made a sanitary inspection of this borough, a total of 668 properties being inspected. It was found at this time that there was but one public sewer in the borough, this being constructed in 1898, and having five estates connected thereto. At least fifty private sewers were found discharging into the Schuylkill Canal or tributaries thereof. These sewers vary from four inches to twelve inches in diameter. Bath wastes from 53 properties were discharging through pipes direct to either streets or alleys; while kitchen waste and wash-water drainage to highways numbered 287. In the following table is given a summary of pollutions existing at the time of this inspection:

Character of Pollution.	Number.
Pig pens,	7
Privies,	37
Barn yards,	8
Water closets,	53
Kitchen waste and wash water,	352
Baths,	105
Garbage,	1
Cesspools,	12
Slaughter house,	2
Urinals,	2
Factories,	2
Total,	581

This total of 581 separate pollutions existed on 367 properties out of a total of 668 properties, or one or more pollutions on 55 per cent. of all properties inspected. Notices of abatement of pollutions, except in the case of kitchen drainage, were served on the owners of polluting properties in 1909, following which some abatement work was performed. Action by the Department to enforce abatements in all cases has not been taken, due to the fact that following the service of these notices the borough took preliminary steps looking toward the installation of a public sewer system; but this project has not yet materialized. From a general survey of the borough it is apparent that methods of sewerage and sewage disposal have improved little or not at all.

The municipal territory covers an area of about 950 acres, of which approximately 150 acres are well built up. It extends along the river front for a distance of 2.6 miles and has a maximum width of 0.9 miles. The built-up section lies about the middle of the borough, and in the outlying sections the natural drainage is fairly good; while in the business section the streets have comparatively flat grades. Mill Creek and Lower Mill Creek, which streams flow about through the center of the borough approximately 600 feet apart, rise in Windsor Township about two miles northeast of the borough and discharge into the Schuylkill Canal, an overflow being provided to the river opposite the mouth of each stream. Each creek is an open stream from its source to the borough, and along its course through the borough for the most part it is walled up, although not covered except at street crossings. Each stream also receives kitchen drainage from gutters, overflow from privies and sewage from numerous private sewers from individual estates and from manufacturing plants. The flow in each stream assumes low proportions during dry weather, becoming very filthy and constituting a nuisance.

The other stream mentioned as draining a portion of the borough is in the extreme northern section passing down to the canal through a small hamlet known as Waterloo, this being distant from the business section of the town about one mile.

The streets of the borough are unpaved although for the most part provided with improved gutters which receive much laundry waste. Many of the alleys are poorly drained and in an insanitary condition.

Cesspools and privies are in use. The ground water appears to lie near the surface and the sewage receptacles fill up and have to be cleaned. It would seem that the health of the community must suffer.

Water Works.

The public water works installed about 1889 are operated by the Windsor Water Company. There is an intake on Furnace Run 2½ miles northeast of the borough at the foot of the south slope of Blue Mountain. Above it there is a drainage area of 1,500 acres of uninhabited mountain land, covered mostly with second growth timber. A considerable portion of the area is owned by the water company. The valley above the intake is narrow. There is a half mile of little used public highway across the western side of the watershed and it is visited by hunters and sometimes by small picnic parties. There are two wells and a pumping station close to the reservoir at the intake and all these are fenced in. It has not been necessary to resort to the wells during 1915. The consumption is estimated at 500,000 gallons a day, including supplies to a number of industries.

Prior to the general use of the public water works there were many private wells in the borough, but their use has been gradually discontinued, especially since the typhoid fever epidemic of 1906, when numerous wells were condemned by the local health authorities. Now very few wells are used for water but in many instances they have been turned into cesspools.

Typhoid Fever.

An epidemic of 118 cases of typhoid fever occurred in Hamburg in 1906. The Department was then new and not as well known to the public as now, and did not receive information of this outbreak at the time, and no investigation was made. A heavy rain and high water in the creeks put the water works temporarily out of commission and also affected the private wells. The epidemic occurred in August and September and was attributed to polluted wells and springs. The morbidity reports from the borough are incomplete, but they show that there have been scattered cases of typhoid fever since 1905.

In 1905 there were 14 cases of typhoid fever, 11 of the cases being grouped in a small outbreak, 7 in September and 4 in October. The following data were obtained by a Department officer:

Date of Onset.	Number of Cases.	Date of Onset.	Number of Cases.
Sept. 12.	1	Oct. 1,	1
Sept. 18.	1	Oct. 5.	1
Sept. 20.	1	Oct. 9,	1
Sept. 23.	1	Oct. 12.	1
Sept. 26.	2		
Sept. 27.	1	Total.	11

Age Period.	Male.	Female.	Total.
5- 9.	..	1	1
10-14.	..	1	1
15-19.	1	1	2
20-24.	1	2	3
25-29.	2	..	2
30-34.	1	..	1
45-+,	..	1	1
Total.	5	6	11

Occupation.	No. of Cases.
School children.	2
Housewives.	2
Dentist.	1
Factory hands.	3
Store salesmen,	2
Laborer,	1

Water Supply.	No. of Cases.
Public water only,	5
Public water and well,	1
Public water and West Reading Supply,	1
Public water and various,	4

Seven of the patients had used ice from two local dealers, four from Wertley and three from Strosser. Six obtained their vegetables from their own gardens and the other five from various sources. Five had used oysters but for three they had been cooked. They were obtained from three different sources.

The milk supply for five of the patients was obtained from one of the largest dealers in the borough. The milk from four other dealers had been used among the rest of the patients. Ice cream from four different sources had been used among eight of the cases of typhoid fever.

Four of the cases of typhoid fever may have been contracted during visits outside of the borough. The origin of the other seven cases is not clearly indicated by the foregoing data. The only feature which appears at all significant is the location of some of the cases. Four of them resided between the two filthy stream channels and four others not more than 300 feet therefrom. Each of the cases was within two blocks of another case. One of the additional cases worked in this neighborhood. Privies not well screened were in use on all but two of the properties, thus flies may have been a factor in the spread of the disease, for they were numerous at the time.

The public water supply was not suspected, but because of the stream being subject to chance pollutions by hunters and picnickers and because of the presence of the disease in the community, an emergency apparatus was installed at the intake for disinfecting the supply with chlorinated lime. The treatment was started October 20th and continued until cold weather, the object being to treat the water until the end of the hunting season. Also the distributing system was flushed out. Sample collected both before and after these measures and examined at the Department laboratories did not show the presence of any sewage pollution.

Hamburg needs a public sewerage system and could well afford it. It has a bonded indebtedness of only $17,500 and an assessed valuation of one million dollars. Of course the plans must be presented to the State Department of Health and be approved by the Governor, Attorney General and Commissioner of Health. Unless the borough acts, it is evident that it will be necessary for the individuals to be compelled to dispose of their sewage in a more sanitary manner. Waterproof cement masonry sewage receptacles can be constructed so that they will not fill up with water, and from these the sewage would have to be removed at regular intervals and disposed of in a sanitary manner at remote sites.

TYPHOID FEVER OUTBREAK IN JEANNETTE BOROUGH AND VICINITY, WESTMORELAND COUNTY.

Greensburg is situated in the center of Westmoreland County, of which it is the county seat. Stretching westward from it along the main line of the Pennsylvania Railroad for ten miles is an almost continuous settlement in which are the boroughs of Jeannette, Penn, Manor, Irwin and North Irwin. South of Greensburg in the same closely settled community are South Greensburg, Southwest Greensburg and Youngwood boroughs, the latter five miles distant. The suburban territory around Greensburg and Youngwood is in Hempfield Township. West of it are Penn Township to the north and North Huntingdon Township. The district is devoted essentially to manufacturing and in the southern and western portions to coal production. Structural iron, rubber and glass are the principal manufactures.

The total population of the district is estimated as 40,000. The population of the several boroughs given in the 1910 census was as follows:

Greensburg,	13,012	Penn,	1,048
Irwin,	2,886	South Greensburg,	1,048
Jeannette,	8,077	Southwest Greensburg,	2,147
Manor,	1,039	Youngwood,	1,881
North Irwin,	646		

Greensburg, South Greensburg, Southwest Greensburg and Youngwood boroughs all drain to Jacks Run, a tributary of Big Sewickley Creek, which in turn flows into the Youghiogheny River near West Newton. These boroughs are all quite extensively sewered with outlets into the run and its tributaries.

Jeannette, Penn, Manor, Irwin and North Irwin boroughs are in the valley of Brush Creek, a tributary of Turtle Creek, which it joins at Trafford, and which enters the Monongahela River at Braddock. Jeannette borough is quite extensively sewered into Brush Creek and a tributary, Bull Run. Manor, Penn, Irwin and North Irwin are practically without sewer systems.

Water Supply.

The Westmoreland Water Company operates an interconnected system throughout the boroughs and intermediate township districts of this entire community, the charter rights in this district being held in the names of eight allied water companies. The investigation of the water works system covered a period from October 1 to 16, 1915.

The main source of supply is the Immel reservoir, located on the western slope of Chestnut Ridge. Some additional water is obtained from a small stream entering the Unity reservoir. These sources being inadequate, the company purchases water from the Mountain Water Supply Company, the water being derived from Indian Creek.

The Immel reservoir supply is derived from three streams, the flow of which is diverted into the reservoir, Armel Run, Sewickley Creek and Nine Mile Run having watersheds of 1.41, 0.80 and 0.41 square miles, respectively. These watersheds are wooded, Sewickley Creek being the only one with any habitations thereon. On this stream there is one property just above the intake dam. It is frequently inspected and reported to contribute no pollution. The reservoir has a capacity of 177,000,000 gallons, but at the time of the investigation contained only 26,000,000 gallons. A 14-inch supply main extends northwest from the Immel reservoir a distance of about 6.8 miles to its junction with a 16-inch line connecting with Unity reservoir.

Unity reservoir has a small uninhabited watershed with an arear of 0.67 square miles. It is used mainly to store up surplus water from the Immel reservoir. The Unity reservoir has a reported capacity of 486,000,000 gallons when filled to its maximum depth of 57 feet. It is stated that since its construction in 1901 the reservoir has never been filled, the maximum content having been about 264,000,000 gallons. At the time of the investigation the reservoir was said to contain about 90,000,000 gallons. At the Unity reservoir a pumping station is maintained housing a 3,000,000-gallon Worthington duplex pump which delivers water from the reservoir back into the supply main from Immel reservoir. This station is not operated when there is an ample supply coming by gravity from the Immel reservoir, but its use has been found necessary during six to eight months each year.

Dry Ridge reservoir is located on high ground a short distance from Unity reservoir. It is a circular concrete and stone structure with a capacity of 2,000,000 gallons and is used as a distributing reservoir. The pipe connections are such that water from the Immel or Unity reservoirs, or both, may pass through the reservoir or be diverted around it to the distributing system.

Owing to the small amount of water in storage at the Immel reservoir this supply was cut off on July 17, 1915, and had not been used after that up to and during the investigation, so that the only water derived from this part of the system was that stored in Unity reservoir.

From Dry Ridge reservoir an 18-inch line extends southwesterly to South Greensburg and a 12-inch line passes through the northern part of Greensburg to a point near the Jeannette reservoir. The 18-inch South Greensburg line branches into an 8-inch line extending southerly to Youngwood and a 14-inch line extending through the western part of Greensburg to Jeannette. The Indian Creek supply enters the system at South Greensburg by way of a booster pump station described later.

The Jeannette reservoir is located about two and a half miles west of Greensburg and about the same distance east of Jeannette. It serves as a distributing reservoir and has a capacity of 70,000,000 gallons. At the time of the investigation it held about 45,000,000 gallons. This reservoir receives its supply by way of a 14-inch line from South Greensburg and a 12-inch line passing through the northern part of Greensburg, both described above. Through these lines it therefore receives water from the Immel and Unity supplies and may at times receive some of the Indian Creek source. The supply mains are cross-connected near the reservoir. There are said to be springs in the bed of the Jeannette reservoir which augment the supply to some extent. A small tributary stream at the western side of the reservoir with an uninhabited watershed traversel by a highway was diverted from the reservoir at the time of the investigation. Surface drainage from the remaining area above this reservoir has for several years been diverted around it in an adequate channel owing to the presence of several habitations. The water from the mains enters and leaves the reservoir by way of a 16-inch pipe. From this point an 8-inch line extends to and supplies a portion of Jeannette and a 14-inch line extends westerly to Jeannette and thence continues 12 inches in diameter to Penn Borough, reducing to 10 inches through Manor Borough to the Irwin reservoir.

Irwin reservoir is in the eastern part of Irwin Borough and serves as a distributing reservoir for Irwin, North Irwin and vicinity. It is circular in plan and has a capacity of 1,000,000 gallons.

The Indian Creek supply, from which water is obtained by purchase from the Mountain Water Supply Company, is derived from a drainage area of 110 square miles, much of which is devoted to agricultural purposes. A detailed inspection by officers of the Department in 1914 indicated that there were 942 properties with a total population of 3,755. There had been 85 cases of typhoid fever on the watershed during the preceding ten years. Indian Creek Valley Railroad extends practically throughout the valley near the stream. There are some lumber and coal mining operations and in summer probably not less than 1,000 campers regularly visit the drainage area. The reservoir has a reported capacity of 231,000,000 gallons. The water is used primarily by the Pennsylvania Railroad Company and is delivered through a 36-inch supply main which branches near Connellsville, one branch passing through Uniontown to West Brownsville and thence down the Monongahela River to a point near Homestead, the other extending through Scottdale to South Greensburg, thence westerly along the main line of the Pennsylvania Railroad through East Pittsburgh, and thence across the Monongahela River connecting with the branch previously described. There are a large number of reservoirs connected with this system which is used mainly for industrial purposes. It has been used at times for domestic purposes at Scottdale as well as by the Westmoreland Water Company. Since April, 1913, this water has been treated with chlorinated lime applied at the Indian Creek reservoir at the rate of fifteen pounds per million gallons of water. The total daily consumption of Indian Creek water varies from 6,000,000 to 8,000,000 gallons, of which probably 85% passes through the main extending through Greensburg. This main where it passes Greensburg is 30 inches in diameter.

On January 2, 1909, a 12-inch connection was made to this 30-inch main of the Mountain Water Supply Company at County Home junction near South Greensburg, and in December, 1910, a booster pumping station was installed at this point by the Westmoreland Water Company. Here a brick building houses two 8-inch two-stage centrifugal pumps (each having a capacity of 1,300 gallons per minute), driven by 75 H. P. electric motors. The suction lines of the pumps are connected with a 12-inch line from the 30-inch Indian Creek supply main and the discharge lines connect with the 18-inch line leading from Dry Ridge reservoir and with the 8-inch line extending to Youngwood.

The water consumption at the time of the investigation was approximately 2,300,000 gallons of which 1,300,000 gallons were pumped from Unity Storage reservoir and 1,000,000 gallons obtained from the Indian Creek supply of the Mountain Water Supply Company at the booster station. The supply mains and distributing system are so interconnected that there is no fixed line of demarcation between the territories supplied by each, this line varying constantly through wide limits depending upon the demand in various sections. The booster station was operated generally from about 7 A. M. to 10 or 11 P. M. and the Unity pumping station from about 6 A. M. to about 2 A. M. the following morning. It is probable that Youngwood receives Indian Creek water most of the time if not entirely, although in case of a heavy draft during the night water from Dry Ridge reservoir would probably enter the main as there is no storage at Youngwood. The southern part of the Greensburg district probably receives mostly Indian Creek water and a large part of the district may receive it at times. The Jeannette and Irwin districts receive both supplies mingled, but to what extent each was used could not be even approximately determined.

Typhoid Fever.

Of the eighty-three cases of typhoid fever of which a census was made by Department officers, fifty-eight cases or 70% occurred in Jeannette and the immediate vicinity, fourteen cases or 17% in the district west of Jeannette, including Penn, Manor and Irwin boroughs, and eleven cases or 13% in the district east of Jeannette, including Greensburg and Youngwood. The following tables have been compiled from the data collected relative to these eighty-three cases:

Onsets.

Date of Onset. 1915.	Number of Cases.	Date of Onset. 1915.	Number of Cases.
January 26,	1	August 25,	3
February 1,	1	26,	1
5,	1	28,	1
April 1,	1	29,	1
May 1,	1	30,	2
15,	1	31,	1
27,	1	September 1,	1
30,	1	2,	1
June 1,	2	4,	2
10,	2	5,	4
July 1,	1	6,	2
5,	1	8,	1
10,	2	10,	4
11,	1	11,	1
13,	1	13,	4
15,	1	14,	1
20,	2	15,	1
21,	1	17,	1
23,	1	20,	4
25,	2	21,	1
August 1,	3	22,	1
2,	2	23,	1
7,	2	25,	1
10,	2	26,	3
14,	2	27,	2
17,	1		
24,	1	Total,	83

The following is a record of the cases of typhoid fever reported to the Department of Health during the last ten years from Jeannette and the other boroughs in that vicinity covered in this report.

Boroughs.	Pop. 1910.	Typhoid Fever Cases.									
		1906	1907	1908	1909	1910	1911	1912	1913	1914	1915
Greensburg,	13,012	4	10	16	25	------	14	2	------	------	11
Irwin,	2,886	------	------	------	8	3	5	------	------	1	1
Jeannette,	8,077	15	2	10	17	9	23	8	23	15	50
Manor,	1,039	------	3	------	------	3	1	1	1	------	1
North Irwin,	646	------	------	------	------	5	------	------	------	------	1
Penn,	1,048	------	------	------	------	4	1	3	5	------	2
South Greensburg,	1,748	------	13	20	6	6	2	1	------	------	3
Southwest Greensburg,	2,127	------	------	------	------	5	2	------	1	3	------
Youngwood,	1,881	------	------	2	------	------	1	------	------	------	------

Distribution of Cases by Months—1915.

Municipality.	January.	February.	March.	April.	May.	June.	July.	August.	September.	Total.
Greensburg,								2	6	8
Irwin,									1	1
Jeannette,	1	2			3	2	3	8	15	34
Manor,								1		1
North Irwin,								1		1
Penn,							1	1	1	3
South Greensburg,								2		2
Southwest Greensburg,										
Youngwood,									1	1
Hempfield Twp.,				1			5	5	6	17
North Huntingdon Twp.,							2	2	3	7
Penn Twp.,					1	2	2		3	8
Total,	1	2		1	4	4	13	22	36	83

Water Supplies Used.

Municipality.	Public supply only.	Public supply and well.	Public supply and spring.	Well only.	Spring only.	Total.
Greensburg,	8					8
Irwin,		1				1
Jeannette,	22	8	2	1	1	34
Manor,		1				1
North Irwin,			1			1
Penn,	1	1	1			3
South Greensburg,			2			2
Southwest Greensburg,						
Youngwood,	1					1
Hempfield Twp.,	11	1	1	4		17
North Huntingdon Twp.,	1	5		1		7
Penn Twp.,	3	4	1			8
Total,	47	21	7	6	1	83

Milk Supplies.

Name of Dealer.	Number of Typhoid Cases.		
	Total.	Milk Supplied in—	
		Bottles.	Cans.
None,	6	----	----
Unknown,	3	----	----
Condensed,	9	----	----
Own cows,	3	----	----
Sandson,	8	1	7
Trogolo,	5	----	5
Reybold,	4	1	3
Kramer,	4	4	----
Erhart,	4	1	3
Sickel,	3	3	----
Shrum,	3	3	----
Cloverdale,	2	1	1
Wangaman,	2	1	1
Shuster,	2	----	2
Dealers supplying one case each,	25	10	15
Total,	83	25	37

AGE AND SEX.

Age Periods.	Male.	Female.	Total.
0- 4,	4	2	6
5- 9,	2	6	8
10-14,	2	6	8
15-19,	16	8	24
20-24,	6	9	15
25-29,	6	2	8
30-34,	2	3	5
35-39,	1	1	2
40-44,	1	2	3
45-49,	1	1	2
50-over,	1	1	2
Total,	42	41	83

ICE SUPPLIES.

Dealer.	Number of Cases.
None,	50
Unknown,	5
Jeannette Transfer Co. (artificial),	12
Mull Transfer Co.,	5
Westmoreland Ice Co. (artificial),	5
McKnight (artificial),	3
Greensburg Ice Co.,	1
Irwin Brewery,	1
Simpson,	1
Total,	83

Sewerage Conditions.

Disposal of Sewage at the Home.	Number of Cases.
Having sewer connections,	51
Not having sewer connections,	28
Privy,	44
Cesspool,	8
Kitchen wastes and wash water discharged, to sewer,	48
Kitchen wastes and wash water discharged, to ground surface,	29

Occupation.

Occupation.	Number of Cases.
At home,	27
At school,	14
Penna. Rubber Company, Jeannette,	16
Jeannette Window Glass Co.,	3
McKee Glass Company, Jeannette,	3
Miner,	3
Jersey Flake Cereal Co., near Irwin,	2
Memphis Steel Co., South Greensburg,	2
Laborer—general,	2
Trained nurse,	2
Various—one case each,	15
Total,	83

Water Analyses.

Results of analyses of water samples taken by the Westmoreland Water Company and analyzed at the Morris Knowles laboratories, Pittsburgh, are as follows:

Location.	Bacillus Colon. (Presumptive Tests.)									
	July 14.			July 20.		Sept. 16.			Sept. 28.	
	.1c.c.	1c.c.	10c.c.	1c.c.	10c.c.	.1c.c.	1c.c.	10c.c.	1c.c.	10c.c.
Jeannette,	------	O	+	------	------	+	------	------	O	+
Irwin,	------	------	O	------	------	+	------	------	------	O
Greensburg,	------	O	+	------	------	+	------	------	O	+
Greensburg:										
Indian Creek,	------	O	+	------	------	+	------	------	O	+
Unity Reservoir,	------	------	------	O	+	O	+	------	—	+

A water sample taken on October 4, 1916, by the Jeannette board of health was analyzed at the Pittsburgh Testing laboratories with the following results:

	Total Bacteria.		B. Coli in 1 c. c.
	37°C.	20°C.	
Tap—4th Ave. Hotel, Jeannette,	400	3,000	1

Samples of private as well as the public water supplies were taken by Department representatives in various parts of the district supplied by the Westmoreland Water Company and analyzed at the Department Laboratories with the results shown in the tables given below:

Not:—Tap samples taken on October 1st in Greensburg and Jeannette were delayed in transit and not received at the laboratory until October 5th, thus accounting for the high total count.

Private Supplies.

Location.	1915.	Bacteria per c. c.	B. Coli per c. c.
South Greensburg—Memphis Steel Co.—Spring,	Oct. 5	56	1
Jeannette—118 Cuyler Ave.—Well,	Oct. 6	18	0
Jeannette—McKee Glass Co.—Well,	Oct. 6	16	0
Jeannette—Near 333 Chestnut St.—Well,	Oct. 6	96	0
Jeannette—4th & Division Sts.—Well,	Oct. 6	3,780	0
Jeannette—476 Wylie Ave.—Well,	Oct. 8	9	0
Jeannette—476 Wylie Ave.—Well,	Oct. 8	4	0

UNITY RESERVOIR.

1915.	Bacteria per c. c.	B. Coli per c. c.
Oct. 4,	15	0
6,	3	0
8,	6	0
12,	8	0
13,	72	0

INDIAN CREEK SUPPLY—BOOSTER STATION.

1915.	Bacteria per c. c.	B. Coli per c. c.
Oct. 4,	21	0
5,	8	0
6,	7	0
7,	12	0
8,	13	0
12,	1,140	0
13,	6	0

TAP SAMPLES—IRWIN.

1915.	Bacteria per c. c.	B. Coli per c. c.
Oct. 5,	9	0
	4	0
7,	12	0
	5	0
8,	13	0
	9	0
12,	6	0
	9	0
13,	5	0
	4	0

TAP SAMPLES—SOUTH GREENSBURG.

1915.	Bacteria per c. c.	B. Coli per c. c.
Oct. 5,	48	0
	32	0
6,	11	0
7,	56	0
8,	56	0
12,	8	0

TAP SAMPLES—GREENSBURG.

1915.	Bacteria per c. c.	B. Coli per c. c.
Oct. 1,	6,480	0 (note)
4,	26	0
5,	4	0
	4	0
	22	0
6,	6	0
	2	0
7,	2	0
	72	0
	9	0
	14	0
8,	6	0
	14	0
	11	0
12,	28	0
	15	0
	8	0
	0	0
13,	2	0
	10	0
	0	0

TAP SAMPLES—JEANNETTE.

1915.	Bacteria per c. c.	B. Coli per c. c.
Oct. 1,	240	0
	4,800	0 (note)
4,	21	0
	12	0
	17	0
5,	4	0
	6	0
Fire plug,	72	0
	48	0
	18	0
	9	0
6,	6	0
7,	8	0
	9	0
8,	14	0
	14	0
12,	14	0
	6	0
	6	0
13,	3	0
	4	0
	6	0

Discussion.

There were but few cases of typoid fever in the district subsequent to October 1st and the detailed investigation was confined to those whose onsets occurred prior to that date and after January 1, 1915. It will be noted in the above tables that the outbreak began about the middle of July, continuing until late in September, a period of about ten weeks, corresponding to the usual period of the prevalence of typhoid fever generally throughout the State with the difference in this case that the disease this year was much more prevalent in the district than during previous years.

The milk supplies to the cases are numerous and a careful investigation of this subject failed to reveal any ground for attributing the outbreak to milk infection. Only about half the cases used any ice cream; few cases used shell-fish; vegetables were obtained from widely different sources and no conditions could be found which would warrant attributing the infection specifically to any of these causes. Similarly ice was not used by about 50 out of the 83 cases and the remainder largely used artificial ice from several sources to which no suspicion was attached. The water supplies and other conditions at the various places of occupation were investigated and could not be considered causative.

The greater number of cases occurred in and near the low-lying portion of Jeannette borough where typhoid fever has been endemic for years. This section is occupied mainly by people of moderate and very meager means, mainly the latter. Sanitary conditions were found generally poor. As indicated in a table given above there were 51 cases in homes having sewer connection and 28 where there was none. At the homes of 44 cases there were privies, and in 29 instances kitchen wastes and wash water were discharged onto the surface of the ground. These figures apply to the entire district, but the conditions referred to were especially accentuated in the Jeannette section referred to. Flies were noted as abundant at the homes of 12 of the cases, but this condition was doubtless better when the investigation was made than earlier in the season. Ten cases of fever were probably of secondary origin, due to direct contact with other cases, and six were imported from outside of the district.

While there appears to be little doubt that the strength of the outbreak was materially increased by the lack of proper sanitary precautions in sections which were seeded down with the disease during previous years, the wide distribution of some of the cases throughout the water company's district directed a well founded suspicion toward the water supply as a possible source of the infection. The facts revealed by the investigation seem to bear out the thought that the public water supply may have been the principal factor in making the outbreak larger than would naturally be expected from the experience of previous years in that section.

The sources of supply owned by the Westmoreland Water Company failed to reveal on investigation any serious conditions. The Indian Creek supply, however, water from which is purchased from the Mountain Water Supply Company, comes from a watershed of such character as to attract suspicion at once. This watershed has been described above. The fact that the water had been for sometime treated with a chemical germicide does not remove the danger.

The Department directed the Westmoreland Water Company to treat with copper sulphate the water in the Jeannette reservoir, and this was done under the supervision of a representative of the Department on October 2nd. The Department also directed the water company to install disinfecting apparatus and treat all of the water pumped from the Unity storage reservoir. This was done under the supervision of a representative of the Department on October 4th.

On October 2nd the Mountain Water Supply Company was directed by the Department to increase the dose of germicide applied to its Indian Creek supply and the dose was promptly increased to twenty pounds per million gallons.

The mains of the Westmoreland Water Company were dirty and had not been flushed to any extent for upwards of a year. Under direction of a Department representative the system was thoroughly flushed beginning October 6th.

Analyses of water samples taken by the Department did not indicate sewage pollution, but samples taken by the water company as indicated in tables given above showed such contamination and confirmed the suspicion of the water warranted by knowledge of physical conditions.

Permanent Protective Measures.

Prior to the outbreak the Westmoreland Water Company had filed an application with the Department for approval of the use of water from the Indian Creek source in accordance with the arrangement already installed. On October 13, 1915, a permit was issued to each of the several allied companies for the use of Indian Creek water under the following conditions:

"FIRST: The water companies shall forthwith take steps to remove the possibility of pollution entering Sewickley Run from the inhabited property near the intake dam, either by obtaining possession of the property or installing a tight privy vault and a ditch to convey all surface drainage from the property below the intake dam, and shall make an inspection of the property at least monthly. The existence of any pollution or of any case of infectious or contagious disease on the watershed shall be promptly reported to the State Department of Health.

"SECOND: The water companies shall make an inspection of the occupied properties on the watershed of the run which flows into the canal adjacent to the Jeannette reservoir at least monthly, and the existence of any pollution or of any case of infectious or contagious disease on the watershed shall be promptly reported to the State Department of Health.

"THIRD: Bacteriological analyses of the water supplied to the public shall be made at least monthly or more often if required, and copies of the results of such analyses shall be promptly filed in the office of the State Department of Health.

"FOURTH: Records of the operation of the water works shall be kept on forms satisfactory to the State Department of Health, and copies thereof shall be filed monthly in the office of said Department.

"FIFTH: All relevant conditions and stipulations of the permit issued to the Westmoreland Water Company at Hempfield Township on December 27, 1909, shall be continued in full force and effect.

"SIXTH: Within one month from the date of this permit the water companies shall submit to the State Department of Health for approval plans of apparatus for the treatment with a chemical germicide of all water purchased from the Mountain Water Supply Company and supplied to the public within the companies' territories. This chemical disinfection of the supply shall be in addition to that now added by the Mountain Water Supply Company at its storage reservoir on Indian Creek and shall be considered as a temporary protective measure only and to be maintained in force until such time as more adequate protective measures can be installed in accordance with plans to be approved by the State Department of Health.

"SEVENTH: Within six months from the date of this permit the water companies shall submit to the State Department of Health for approval plans of works for the purification in a modern filtration plant of all water supplied to the public from Indian Creek.

"EIGHTH: Three times each year, or more often if necessary, the water companies shall thoroughly flush the entire distributing system through the fire hydrants or blow-offs, in order to prevent a deposit of sediment in the pipe line.

"NINTH: The water companies shall, in the extensions to the distributing system, provide as far as practicable for the elimination of dead ends by the construction of cross-connections, admitting of the circulation of water throughout the piping system. Where such cross-connections are impracticable, a fire hydrant, blow-off valve or other appurtenance for flushing and draining that portion of the system shall be installed.

"TENTH: If at any time the water supplied to the public, or the water works, or any part thereof, or any source of supply, shall become prejudicial to public health, such remedial measures shall be forthwith taken as the State Department of Health may advise or approve.

"ELEVENTH: Nothing in this permit shall be construed to be an intent on the part of the State Department of Health to approve any act made or to be made by the water companies that is inconsistent with their powers under their charters or with existing laws of the Commonwealth regulating water works."

It will be noted from the tables of the results of analysis given above that only one of the private sources of supply analyzed indicated pollution, namely, the spring at the works of the Memphis Steel Construction Company. Accordingly, the company was notified of the condition of the spring and promptly put into effect protective measures as indicated in the following correspondence:

"October 15, 1915.

"The Memphis Steel Construction Company, Greensburg, Pa.

"Gentlemen: Analysis made by the Department of water from the spring said to be at the northern end of your property near Broad Street and used extensively by your employes indicates sewage pollution. This spring should either be effectively closed up and made inaccessible or the source of contamination should be ascertained and removed. The safer procedure would doubtless be the former. There have been two cases of typhoid fever among your employes and both of these men used water from this spring. This, of course, does not mean necessarily that the infection came from this source. Will you kindly give this matter your prompt attention and let us hear from you regarding the steps taken?

"Very truly yours,

"SAMUEL G. DIXON."

"Greensburg, Pa., October 18, 1915.

"Samuel G. Dixon, M. D., Commissioner, Department of Health, Harrisburg, Penna.

"Dear Sir: We have your letter of the 15th relative to spring on our premises and we are to-day taking steps to barricade this so it cannot be used and at the same time posting a notice quoting from your letter.

"It would not be practicable for us to correct the trouble; therefore, we are trying to stop the use of the water.

"Yours very truly,

"MEMPHIS STEEL CONST. CO. OF PENNA.

"C. A. HUNT, President."

TYPHOID FEVER AT JOHNSONBURG.

Johnsonburg, a manufacturing community of 5,000 in the Clarion River valley at the fork of its East and West Branches, experienced a typhoid fever outbreak of twenty cases from September, 1912, to January, 1913. The description of this outbreak and of the town in general, and the water works in particular, was given in the report of the Department for 1913.

Water Works.

The Johnsonburg Water Company furnishes the public supply. The low service districts are supplied ordinarily from Silver Creek which has an uninhabited mountainous drainage area above the intake. From Powers Run the company pumps its principal supply for the high service districts and it can turn this water into the low service. The high and low service districts have approximately the same number of taps. An auxiliary supply is obtained from five drilled wells and two springs near the pumping station. There are thirteen farms at the head waters of Powers Run and there is a highway along the main stream. At the time of the epidemic in 1913 the Department made a detailed inspection of these properties in order to bring about the abatement of all stream pollution from them. A decree issued to the water company subsequent to the 1913 epidemic required the preparation of plans for the filtration of the Powers Run supply, and also that the water company shall maintain in operation the chemical germical plant installed under the direction of the Department for the treatment of Powers Run water at the time of the epidemic. It also required that both before and after the installation of the filter plant the water company shall maintain a monthly patrol of both the Silver Creek and the Powers Run watersheds, keeping close supervision on lumbering or other operations and reporting promptly the presence of all communicable disease appearing on the shed. However, on August 2, at the time of the Department's investigation, at the property of John Wolf, on the Powers Run watershed, there was a toilet, bath, laundry and kitchen waste pollution unabated. No history of typhoid, at least at all recently, could be discovered in connection with this place.

Following are the results of examination by the Department laboratories of water samples collected by a Department officer:

		Supply.	Bacteria per c. c.	B. Coli per c. c.
Aug. 4	Reservoir, at Gate house,			
	Reservoir, opposite Gate house,			
	Tap, 2nd Avenue and Bridge Street,	Powers Run,	1,800	0
	Tap, Market Street,	Powers Run,	3,060	0
	Tap, Straessley house,	Silver Creek,	11,885	0
Aug. 5	Raw water,	Powers Run,	510	4
	Treated water,	Powers Run,	80	0
	Tap, 2nd Avenue,	Powers Run,	300	0
	Tap, Market Street,	Powers Run,	14,040	0
	Tap, Straessley house,	Silver Creek,	64	0

Typhoid Fever.

The investigation undertaken by a Department assistant engineer, August 3rd to 6th, of the present epidemic included a complete census of the cases, and from the data the following tables have been prepared:

Date of Onset.	Number of Cases.
July 6,	2
July 8,	1
July 10,	1
July 12,	1
July 14,	2
July 15,	2
Total,	9

Age Period.	Number of Cases.		
	Male.	Female.	Total.
0- 4,	0	0	0
5- 9,	0	0	0
10-14,	1	1	2
15-19,	0	3	3
20-24,	2	1	3
25-29,	0	0	0
30-34,	1	0	1
Total,	4	5	9

Occupation.	Number of Cases.
Students,	4
Clerks,	3
Telephone operators,	2
Total,	9

Water Supply.	Number of Cases.
Public water only,	5
Public and well water,	3
Public and spring water,	1
Total,	9

Milk Supply.	Number of Cases.
Ward and Baker,	2
Ward and own cow,	3
Shay,	1
Dill,	1
Irwin,	1
Swanson,	1
Total,	9

Ice Cream Supply.	Number of Cases.
Candy Kitchen,	2
Candy Kitchen and Bakers Confectionery,	2
Candy Kitchen and Smith's Drug Store,	2
Ruff's Drug Store,	1
None,	2
Total,	9

Ice, shell-fish and uncooked vegetables were determined to have not been factors in the spread of the disease.

The significant point in the outbreak is the location of the cases, that is, all of them were in what is known as the high service district, that supplied from Powers Run. East Johnsonburg and Clarion Heights are also in this district but are small settlements. The cases were scattered around the main portion of the town, not one occurring in the East Johnsonburg, Clarion Heights or West Johnsonburg districts of the borough nor in the village of Rolfe.

Prior to the recent outbreak there had been many rains, and consequently the surface wash from the entire watershed, including the thirteen estates and the two public highways, entered Powers Run and part of this was pumped to the borough. This water was treated with chlorinated lime but it is very doubtful whether such treatment is satisfactorily carried out. The apparatus for feeding this chemical was installed as an emergency apparatus and requires constant attention in order to prevent clogging. In addition to this, it has been customary to procure a large amount of the chemical. Taking July 1 as the approximate date of infection of the nine cases, the chlorinated lime being used at that time had been kept in an unsatisfactory condition for over four months and must have had very little value as a sterilizing agent.

Precautions Taken.

A notice instructing the people to boil all water used for domestic purposes was inserted in the local newspapers. All houses in which typhoid fever existed were placarded. All sick rooms were screened. The water in the distributing reservoir was treated with copper sulphate. This reservoir had been cleaned on July 21. The piping was thoroughly flushed. The water company officials and the pumping station attendant were impressed with the necessity of strict attention being paid to the chlorinated lime apparatus and the extreme importance of its careful operation.

Conclusion.

While there was no direct evidence that Powers Run had been the source of this recent outbreak, the absence of evidence of any other source of infection, and the location of all of the cases in the district supplied by Powers Run, together with the similar location of almost all past cases in the borough and the dangerous character of the watershed, lead to the suspicion that the Powers Run supply had been the cause of these outbreaks of disease. The early installation of a filter plant may be expected as required by the previous orders of this Department.

TYPHOID FEVER AT JOHNSTOWN.

The City of Johnstown is a typical manufacturing community situated in the southwestern part of Cambria County, at the junction where the Little Conemaugh River from the northeast and stoney Creek from the south form the Conemaugh River to the northwest, and the city stretches into the valleys of all three streams, but

especially up the Stoney Creek Valley which is the widest. There are a number of outlying boroughs. The census figures of Johnstown's population are:

21,805 in 1890.
35,936 in 1900.
55,482 in 1910.
70,000 in 1915, estimated.

The Cambria Steel Company is the principal industry, reported to employ 13,500. There is promise of the continued growth of this company and of the city.

A desultory and inadequate yet extensive system of sewers discharges into the several streams. In the early part of this year Johnstown made application to the Department for consideration of plans for the revision of the sewerage system looking toward the ultimate sewage treatment, and a future policy for the city was tentatively outlined in the permit issued by this Department in response to the application.

The streams which receive Johnstown's sewage are among the most conspicuous in the State because of the degree to which their waters are contaminated with acid mine drainage. They also receive acid industrial wastes from the steel company and from other plants down-stream. The Conemaugh River is the principal tributary of the Kiskiminetas River, and 70 miles below Johnstown, where the Kiskiminetas joins the Allegheny River, it is still so strongly characterized by its burden of acid drainage as to be a most important factor in the condition of the larger river.

Public Water Supply.

The Johnstown Water Company furnishes water to the public throughout practically the entire city and also in a number of the neighboring boroughs. The Cambria Steel Company controls the former company and also furnishes its own supply of water for industrial purposes and drinking around the steel works through the Manufacturers Water Company. The Morrellville & Cambria Borough Water Company furnishes a domestic supply in a limited district. There are several very much smaller private supplies to groups of houses. The Conemaugh & Franklin Water Company supplies the boroughs of East Conemaugh and Franklin, a short distance northeast of Johnstown.

Johnstown Water Company.

The supply of the Johnstown Water Company is drawn entirely from surface streams, the drainage areas of all of which are inhabited. The State Department of Health has in past years inspected the drainage areas of these streams for the purpose of causing the abatement of stream pollutions. The water company is required to see to it that proper receptacles for sewage are provided at all occupied estates and camps and that these receptacles are used and properly maintained to prevent any contamination of surface water; and also to report promptly any neglect of any owner or individual to comply with sanitary regulations and to report promptly the presence of any infectious disease.

The names of the streams and the main river valleys in which they are situated, the storage at the intakes and the spillway elevations of the several sources are given in the following table:

Name of Stream and River Valley.	Million gals. storage.	Miles of drainage area.	Spillway elevation.
Bens Creek Valley tributary to Stoney Creek:			
Mill Creek,	87	6.00	1,423
Dalton Run,	130	4.39	1,485
North Fork Bens Creek,	Intake	10.00	----
Little Conemaugh River Valley:			
Salt Lick Run,	813	11.92	1,485
Conemaugh River Valley:			
St. Clair Run,	15	4.85	1,353
Laurel Run,	Intake	8.00	1,415
*Red Run,	Intake	----	1,525
*Wild Cat Run,	Intake	1.00	1,526
Hinkston Run (Cambria Steel Company),	1,090	11.00	1,393

*Small streams delivered into Laurel Run gravity main.

A chemical germicide is applied to the water from each of the sources above listed. Plants were installed in June, 1915, for treating Salt Lick and Hinkston Run waters with chlorine gas in compliance with orders issued by the State Department of Health in February, and in accordance with plans approved by the Department. The other sources had been treated for several years with chlorinated lime. The use of chlorine gas was substituted at St. Clair and Laurel Runs on October 25, 1915.

The names of the streams and the daily consumption which was being drawn from them on October 12, 1915, the day of the beginning of the Department's investigation, and typical of the consumption at that period, are given in the following table:

Mill Creek,	1.66 million gallons daily.
Dalton Run,	3.34 million gallons daily.
North Fork Bens Creek,	Not used at this period.
Salt Lick Run,	3.74 million gallons daily.
St. Clair Run,	.42 million gallons daily.
Laurel Run,	1.42 million gallons daily.
Hinkston Run,	1.21 million gallons daily.

Hinkston Run is one of the sources of the Cambria Steel Company operated by the Manufacturers Water Company. Water from this source is often given to the Johnstown Water Company in exchange for water from Salt Lick and from Laurel Run, because of mutual convenience of location and pressure. On the date given above the draft from Laurel Run was used entirely by the steel company.

The supplies from the valley of Bens Creek, that is, from the North Fork of Bens Creek, Dalton Run and Mill Creek, are brought together in Ferndale Borough where the combined flow is treated at the chlorinated lime disinfecting plant, which is of up-to-date design and construction. There is only a small intake dam on the North Fork of Bens Creek and the water is used only when it is clear, the draft from it being said to vary from nothing up to 4,000,000 gallons a day. The supply from these sources is furnished in Ferndale south of the city and part way down Stoney Creek valley within the city.

Water from Salt Lick, treated with chlorine gas at the reservoir, is brought through, and supplied in, the Little Conemaugh River valley, and this supply reaches the business district in the forks of the Little Conemaugh and Stoney Creek and part way up Stoney Creek valley to a point where this water mingles with that from the Bens Creek sources. The Conemaugh and Franklin Water Company furnishing the public supply in the boroughs of East Conemaugh and Franklin east of the city was obtaining water for its consumers from the Salt Lick pipe line of the Johnstown Water Company during the course of the epidemic of typhoid fever in the fall of 1915. This has been the practice during dry seasons for some time.

Wards five, six and seven are on the border line between the districts drawing from Salt Lick and from the Bens Creek valley sources. Ward five is nearest Salt Lick and Ward seven farthest up Stoney Creek valley. The Johnstown Water Company maintains that during the typhoid fever epidemic in the fall of 1915, pressure tests at a valve at the corner of Somerset and Diebert Streets, in Ward six, showed two pounds higher pressure on the Bens Creek side than on the Salt Lick side. On December 1st, the manager of the Johnstown Water Company believed that Salt Lick water was reaching a point near Cedar Street in Ward seven. It is reasonable to assume that Salt Lick water reached all three of these wards from time to time. From a point in the fifth ward water is pumped to Westmont borough on the heights.

Water from St. Clair Run, treated at the reservoir with chlorinated lime up to October 25th and subsequently with chlorine gas, is brought into the northwestern end of the city on the southwestern side of the Conemaugh River where it furnishes the supply in a rather well-defined district.

Water from Laurel Run and the smaller streams, Wild Cat and Red Runs, is treated below where the supplies are brought together in one pipe line. The treatment was with chlorinated lime prior to October 25th and subsequently with chlorine gas. This supply (except when Hinkston Run is substituted) is brought into the northwestern end of the city on the northeastern side of the Conemaugh River and is furnished to rather well-defined districts here and along the opposite bank of the river, and some water is conveyed into the eighteenth ward where it mingles with water from St. Clair Run.

Water from Hinkston Run, treated at the reservoir with chlorine gas, is piped from the north into the Conemaugh River valley at a point a little below the junction of Stoney Creek and Little Conemaugh River. This water is primarily one of the industrial supplies for the Cambria Steel Company, the system being operated by its subsidiary, the Manufacturers Water Company, but at times when the Johnstown Water Company is short of water because of drought and also at other times, merely for convenience water from this source is substituted in all the districts mentoned above as supplied from the Laurel Run sources, and the latter is used by the Cambria Steel Company. This was the condition during the period of the epidemic of typhoid fever in Johnstown in the fall of 1915. On October 15th, the use of Hinkston Run by the Johnstown Water Company was discontinued at the instance of this Department because of the condition of the drainage area and

suspicion attaching to the water supply. It was not used again until after the epidemic and until the reservoir had been disinfected with copper sulphate, dragged about in a bag by a launch. The dose of chlorine gas was increased in the meantime, and boiled water in barrels was furnished the employes of the steel company.

Morrellville and Cambria Borough Water Company.

The supply of the Morrellville and Cambria Borough Water Company is derived from a small reservoir on Strayer Run, a tributary of St. Clair Run below the Johnstown Water Company's reservoir, and also from two drilled wells which are situated along the gravity line in the city and from which water is pumped directly into the main. This supply is furnished in the northwestern part of the city on the southwestern side of the river. In many instances the distributing pipes parallel those of the Johnstown Water Company. The water furnished by the Morrellville and Cambria Borough Water Company is not treated with a germicide or in any other way.

Water Supply Drainage Areas.

A detailed inspection of the drainage areas of the several streams supplying Johnstown with water was undertaken by Department officers on or about October 15th, near the beginning of the investigation of the typhoid fever epidemic in the city. The following table is a summary of this inspection, giving for each stream or drainage area, number of properties, population, number of horses, cattle, pigs and the number of pollutions classified as "privy" and "other pollutions," and the number of unsatisfactory properties upon which these pollutions are distributed.

Inspection of Drainage Areas—October 30, 1915.

Stream.	Area.	Properties.	Population.	Horses.	Cattle.	Pigs.	Pollutions.		
							Properties.	Privies.	Other pollutions.
Mill Creek,	6.00	23	82	32	82	128	1	0	2
Dalton Run,	4.30	13	53	22	57	116	3	1	2
N. Fork of Bens Creek,	10.00	44	220	97	139	246	13	12	11
Salt Lick,	11.92	60	240	80	198	259	11	10	8
St. Clair,	4.85	31	113	29	68	75	3	1	7
Laurel,	8.00	36	267	62	82	103	3	2	2
Wild Cat,	1.00	1	10	1	0	5	1	1	1
Hinkston,	11.00	125	535	175	242	366	38	20	63
Strayer,	2.00	15	57	6	9	16	1	1	0

Along the side of the Salt Lick reservoir and parelleling the streams above it for several miles is the line of the Southern Cambria Railroad, which operates cars every half hour. There are toilets on the cars. On the Hinkston Run drainage area there is a small village called Vinco. Except for these features the several drainage areas are more or less similar, farming territory and a considerable proportion of woodland. The water company has bought up some properties in its effort to eliminate pollutions.

Bacteriological Examinations.

Two hundred and sixteen samples of water were collected and examined by the Department of Health during its investigation beginning October 12th. The samples were mostly from the public water works system, but included private streams and wells suspected of having been factors in the spread of the epidemic of typhoid fever. The samples of the public water supply gave low bacterial counts and no colon bacilli as a rule. There were several samples which showed conclusively that Hinkston Run and the water supplied from it was dangerous, colon bacilli being found. Only one sample from Salt Lick showed colon and this was before it was treated.

However, the bacteriological examinations which are conducted by the Johnstown Water Company of daily samples of the raw and treated water from each of its sources during September and October are of more importance in this study, since it was then that such typhoid fever infection as occurred must have taken place.

During September, fourteen samples of Salt Lick water showed bacteria of sewage origin, as well as seven samples of Hinkston Run water. Bad samples of Hinkston Run water were also obtained in October. On October 14th and 15th, the mains of the Johnstown Water Company were flushed and samples were taken of the water. At this time three samples of water in the Salt Lake district contained colon bacilli, as well as several samples in the southern part of the city in the Bens Creek district.

A number of private wells and springs suspected and sampled showed evidences of gross pollution.

TYPHOID FEVER.

The prevalence of typhoid fever in Johnstown in past years is shown by the following table of cases of the disease reported in the city:

	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915
Jan.,	12	5	2	32	2	3	1	1	3	1
Feb.,	2	3	6	13	2	0	0	1	1	0
Mar.,	0	1	5	3	0	2	2	3	1	0
Apr.,	2	2	1	0	1	1	2	2	1	2
May,	7	1	0	3	1	0	1	0	3	12
June,	2	3	10	1	5	0	0	2	1	6
July,	8	1	22	3	3	14	5	6	4	2
Aug.,	14	13	32	31	17	10	12	17	6	4
Sept.,	37	16	52	14	38	18	8	9	46	4
Oct.,	30	12	30	12	25	7	13	8	25	53
Nov.,	39	26	21	8	34	8	6	2	2	12
Dec.,	31	10	52	4	13	5	0	3	1	22
Total,	184	93	233	134	140	68	50	54	94	118

The census conducted by Department officers covered 107 cases in the public water supply districts in Johnstown and vicinity. The following tables have been complied from the data collected:

Date of Onset.	No. of Cases.
Aug. 5,	1
Aug. 16,	1
Aug. 26,	1
Sept. 8,	1
Sept. 10,	1
Sept. 12,	1
Sept. 15,	1
Sept. 18,	1
Sept. 20,	3
Sept. 21,	2
Sept. 23,	4
Sept. 24,	2
Sept. 25,	6
Sept. 26,	3
Sept. 27,	4
Sept. 28,	2
Sept. 29,	3
Sept. 30,	3
Oct. 1,	6
Oct. 2,	5
Oct. 5,	1
Oct. 6,	1
Oct. 7,	2
Oct. 9,	1
Oct. 10,	4
Oct. 11,	1
Oct. 12,	1
Oct. 13,	2
Oct. 15,	1
Oct. 16,	1
Oct. 17,	1

Date of Onset.	No. of Cases.
Oct. 18,	1
Oct. 23,	1
Oct. 25,	1
Oct. 28,	1
Oct. 31,	1
Nov. 1,	2
Nov. 3,	1
Nov. 5,	1
Nov. 10,	1
Nov. 14,	1
Nov. 15,	1
Nov. 17,	1
Nov. 18,	1
Nov. 20,	3
Nov. 21,	2
Nov. 22,	2
Nov. 23,	2
Nov. 24,	2
Nov. 25,	1
Nov. 26,	1
Nov. 28,	2
Nov. 30,	1
Dec. 1,	1
Dec. 4,	1
Dec. 7,	1
Dec. 11,	1
Dec. 12,	2
Dec. 16,	1
Total,	107

Age Period.	No. of Patients.	Age Period.	No. of Patients.
1- 4,	2	35-39,	3
5- 9,	12	40-44,	4
10-14,	16	45-49,	3
15-19,	22	50-54,	4
20-24,	19		
25-29,	14		
30-34,	8	Total,	107

Fifty females and 57 males comprised the 107 cases. Thirty-five school children were among the patients, but a close study of their distribution in different schools and of attendant circumstances revealed nothing significant. According to the reports obtained there were thirteen deaths, 4 among the 39 patients treated in hospitals and 9 among the 68 cases treated at home.

CASES ACCORDING TO WARDS AND PROBABLE WATER SUPPLY WHEN INFECTED.

Ward.	Population.	Salt Lick.	Hinkston.	Laurel.	Bens Cr. sources.	St. Clair.	Cambria & Morrellville.	Wells and springs.	Total.
1,	3,200	4							4
2,	1,625								
3,	750	2							2
4,	1,475	3							3
5,	2,950	2a			a				2
6,	4,400	4a			a				4
7,	2,600	7a			a				7
8,	3,600				3b(1s)			1	4
9,	3,500	8							8
10,	2,800	3						1	4
11,	4,700	2							2
12,	2,300	5							5
13,	1,750	2							2
14,	2,900		2	1					3
15,	2,000		2				2h		4
16,	3,050		6(1s)				4(3h)		10
17,	7,000				11(5w)			3w	14
18,	2,450		4			1	1		6
19,	2,050					3(1h,1v)	1s		4
20,	2,450					3(1s)	1v		4
21,	1,500								
Franklin,	2,200	4							4

CASES ACCORDING TO WARDS AND PROBABLE WATER SUPPLY WHEN INFECTED—Continued.

Ward.	Population.	Salt Lick.	Hinkston.	Laurel.	Bens Cr. sources.	St. Clair.	Cambria & Morrellville.	Wells and springs.	Total.
E. Conemaugh,	5,200	4						1	5
Westmont,	1,500	1							1
Southmont,	1,200				1s				1
Dale,	2,700				2(1x)				2
Ferndale,	1,800				2(1y)				2
Total,	73,650	51	14	1	19	7	9	6	107

a—received mixed water but attributed to Salt Lick as the more likely.
b—one secondary case.
h—Hinkston water used at school or work.
s—Salt Lick water used at school or work.
v—various water used at work.
w—in Walnut Grove.
x—attributed to Walnut Grove.
y—taught school at Windber.

Dates of onset of the cases using Salt Lick and Hinkston Run Water:

Date of Onset.	Salt Lick Run.	Hinkston Run.
Aug. 5,		1
Aug. 16,		1
Sept. 8,	1	
Sept. 12,	1	
Sept. 15,	1	
Sept. 18,	1	
Sept. 20,	4	
Sept. 21,	1	1
Sept. 23,	1	2
Sept. 24,	1	1
Sept. 25,	3	3
Sept. 26,	2	
Sept. 27,	1	2
Sept. 28,	1	1
Sept. 29,	1	
Oct. 1,	3	2
Oct. 2,	2	1
Oct. 5,	1	
Oct. 7,	2	
Oct. 9,	1	
Oct. 10,	2	2
Oct. 11,		1
Oct. 12,	1	
Oct. 13,		1
Oct. 16,	1	
Oct. 17,	1	
Oct. 18,	1	
Oct. 23,	1	
Oct. 25,		1
Nov. 1,	1	
Nov. 3,		1
Nov. 10,	1	
Nov. 15,	1	
Nov. 17,	1	
Nov. 20,	2	
Nov. 21,	1	
Nov. 22,	1	
Nov. 23,	1	
Nov. 24,	1	
Nov. 25,	1	
Nov. 26,	1	
Nov. 28,	1	
Nov. 30,	1	
Dec. 1,	1	
Dec. 4,	1	
Dec. 7,	1	
Dec. 11,	1	
Dec. 12,	2	
Dec. 16,	1	
Total,	56	21

Thirty-six milk dealers supplied the 107 typhoid fever cases. The Sanitary Dairy Company with 21 cases supplied a greater number of patients than any other dealer. This company serves from 60 to 70 per cent. of the milk used in the city. All of its milk is subjected to a so-called sterilization process. It is raised to and held at a temperature of 145 degrees for thirty minutes. It is then sent through cooling pipes ending at the bottling machines where 600 gallons are bottled each day. The

company sells 150 gallons of milk in bulk and 100 gallons of ice cream daily. The cream for ice cream is pasteurized at 160 degrees. All bottled and bulk milk is sold in Johnstown and vicinity. Some of the ice cream goes as far as 40 miles. The cans are soaked in cold water, washed in hot water with a washing compound, rinsed and inverted over steam jets so as to effect fair sterilization. The bottles are washed with a washing compound on a revolving brush, rinsed in warm water and inverted over steam jets, but not long enough to effect sterilization. There was no record of typhoid fever or dysentery among any employes of the company during the last ten years.

A similar investigation was made of other dairies but no information was obtained to indicate that the milk supplies were a factor of any considerable importance in the spread of the epidemic. Nevertheless, there is room for improvement in the conditions.

In all sixteen milk distributing concerns and 37 dairy farms were inspected. Only one instance of typhoid fever history among employes was discovered. A son of one of the dairy farmers came down with typhoid fever October 8, 1915, and was immediately removed to a hospital. A Department officer fumigated the farm house and sterilized all utensils and the sale of milk was prohibited for about one week while this was being done. There were four typhoid fever cases on the route served with this milk, all with dates of onset at least two weeks prior to the onset of the case at the farm.

In the Walnut Grove district private wells and springs known to be polluted are considered responsible for nine cases of typhoid. The disease has been prevalent here.

TYPHOID FEVER ON WATERSHEDS AND REMEDIAL MEASURES.

On October 14th, the Department officers learned from the city health authorities of two typhoid cases above reservoirs supplying the city. No investigation had yet been made. Dr. Royer, Chief Medical Inspector, Dr. Matthews, of Johnstown, county medical inspector, and Assistant Engineer Drake made inspections that day.

Paul Case.

The Ben Paul property is situated in Jackson Township on the Salt Lick watershed, at the head of a small wet weather stream. Mr. Paul and his family of seven have occupied this property for over forty years, farming it in a desultory sort of way. The conditions are primitive to the extreme and at the time of the visit of Department officers the premises were filthy.

No privy was provided on the premises, the cellar of the barn being used for this purpose. The water supply consists of two springs, one about seventy-five feet in the rear of the house and the other about one thousand feet away. Both springs were dirty and showed distinct fungus growth. A blind wet weather drain extends from the spring near the house to a small wet weather run which, in turn, enters the main stream about two thousand feet away.

The entire surroundings on this property were filthy, the cellar of the barn being so placed with respect to elevation and location that it undoubtedly drains directly into the wet weather stream. All kitchen and laundry wastes, if, indeed, there was any laundry waste, emptied directly into the same stream.

As far as can be determined, the date of onset of the first case of typhoid fever in this family was on September 1, 1915. This patient, William Paul, was at that time working for the Johnstown Water Company on a drain extending from a coal opening above the head of the reservoir to the spillway of the dam for the purpose of carrying mine waste off the watershed without polluting the reservoir. William Paul continued at this work until September 11th, when his condition compelled him to cease. His brother, Walter Paul, worked with him, and both were compelled to walk daily the entire length of the reservoir and up the small run, above referred to, to their home, twice a day. It is reported by the water company that extreme care was taken in maintaining sanitary conditions on this work, but the fact remains that these two patients during their walk to and from work were not under supervision of the foreman of the water company. This condition obtained for at least eleven days, during all of which time one of the patients, and during a portion of the time both of the patients, were troubled almost continuously with diarrhoea. It is entirely probable, therefore, that pollution of the watershed in the immediate vicinity of the reservoir occurred.

On September 14, 1915, Dr. Martin, of East Conemaugh was called on the case, but on September 16th was replaced by Dr. A. E. Fitchner, of East Conemaugh. On September 26th, Dr. Fitchner removed both William and Walter Paul to the Memorial Hospital in Johnstown, and on October 2nd, Frank, and on October 3rd, Rachael Paul, members of the same family, became ill. These patients were removed to the Memorial Hospital on the 12th of October, 1915. None of these cases were reported to this Department by the attending physician, all four cases being reported to the local board of health by the hospital authorities at Johnstown on October 13th, nearly a month after the first case was received in the hospital.

Steps were immediately taken after the visit of the Department officers to thoroughly disinfect the house. The contents of the cellar of the barn were entirely removed, treated with hypochlorite of lime and buried in such a place that its entrance into the reservoir would be entirely avoided. As a further precaution, a seris of furrows were plowed around the place where the contents were buried and two furrows ten feet apart were plowed across the field of the Paul propoerty between the barn and the stream. Both springs were treated with hypochlorite of lime and the blind drain, at one place twelve feet under the surface of the ground, was entirely dug up, cleaned of its accumulation of organic matter and treated with hypochlorite of lime. The wet weather stream in the rear of the house was thoroughly cleaned of reeds and weeds and the muck in the bottom dug out and buried. In addition to this a concrete privy vault was built and the entire premises left in a sanitary condition.

Since the financial condition of the owner of the property would not permit of his bearing the expense of this work, all cost of cleaning up was borne by the Johnstown Water Company and the work was done under the direction of a representative of the Department of Health.

As a further precaution, the amount of liquid chlorine introduced into the water from this source of supply was increased from one and one-half to two pounds per million gallons.

For failure to report these and other cases of typhoid fever, Dr. Fitchner was prosecuted by this Department, and after pleading guilty was duly fined.

Killen Case.

A visit to the Killen case disclosed the fact that Mrs. Killen, aged 52, had been ill since September 28th, and that the ailment had been diagnosed by Dr. Fitchner as typhoid fever, and a nurse was installed on October 8th. In spite of this fact the case was not reported to the State Department of Health until the evening after the Department officers visited the premises.

The Killen property is located at the head of a small run traversing the east bank of Hinkston reservoir and about one-half mile away from the reservoir. At the time of the inspection by officers of the Department a ditch running from the house to the stream and receiving all of the kitchen waste and wash water from the household, including that of the patient, was in a filthy condition. For a distance of two hundred feet and ending in a pig run the muck in this stream was about six inches deep. The privy in use at that time was a dug vault standing fifty feet from the stream and perhaps thirty feet above it in elevation. Excreta from the patient had been disposed of in this privy without the use of any germicide from the time of inception of the disease until October 11th, when a hole was dug in flat ground on the hill above the house. From that date all excreta and wash water from the patient were buried in this hole, after being treated with hypochlorite of lime.

An effort was made to remove the patient to a hospital, but since her condition would not allow of this, strict instructions were given to her nurse about the proper precautions to be taken. Frequent visits to the property were made by Dr. Matthews, county medical inspector, and by officers of the Department, and every precaution was taken to prevent further contamination from this property.

The entire ditch, pig run and stream were cleaned out and treated with hypochlorite of lime. The material excavated from these sources was plowed under a corn field off the watershed. Large barrels were installed to catch the kitchen waste and emptied into the above-mentioned corn field. All wash water from the patient was removed to the above-mentioned field and treated with hypochlorite of lime. All this work was done by the Manufacturers Water Company.

Furthermore, a temporary germicide plant using hypochlorite of lime was installed under the direction of a Department officer by the Manufacturers Water Company at the mouth of this stream to treat the water before it could reach Hinkston reservoir. Hypochlorite of lime at the strength of approximately fifty pounds per million gallons was fed by this plant. This unusually high amount of germicide was used because of the possible quick change of flow in the run and also because the amount of water entering the reservoir from this run was small in comparison with total amount in the reservoir.

This plant was kept in operation for four weeks after the discharge of the patient on November 13th.

Kelley Case.

On August 13, 1915, Merton Kelley, of East Conemaugh Borough, was taken ill and called in Dr. A. E. Fichtner of that borough, who diagnosed the case as typhoid and removed the patient to his parents' home in Conemaugh Borough on the Hinkston Run watershed. This case was not reported to the State Department of Health until August 24th. From August 13th to September 7th the patient was under Dr. Fichtner's care, although the above facts were not learned until October 22nd when an inspector from this Department visited the premises. The inspection disclosed the fact that no precautions whatever had been taken in prop-

erly disposing of the excreta of the patient, they being deposited into an open privy emptying directly into a swamp, or rather pool of water, fifteen feet from Hinkston Run and directly connected to it. This property is less than one mile above the Hinkston Run reservoir.

At the instigation of this Department the property was thoroughly cleaned and a new privy built, away from the stream.

Hinkston Run has never been subjected to regular inspections by its owners, the Manufacturers Water Company, inasmuch as it has never been approved by this Department as a source of domestic supply.

On the evening of October 14th, the Johnstown Water Company, which had been using Hinkston water in Wards 14 and 15, 16 and 21 and part of the 18th, from the 15th to 30th of September and from the 11th to 14th of October, was requested to turn off this supply. The Cambria Steel Company was also requested to turn off Hinkston Run supply from their plant where it was in use for drinking purposes and to install barrels and sanitary drinking cups, obtaining the water from the Johnstown Water Company. At 2 P. M. on October 15th, the Department was informed by the Johnstown Water Company that all Hinkston Run water had been cut off from their mains, and by the Cambria Steel Company that the requests had been complied with.

On October 15th and 16th, Hinkston reservoir was treated with copper sulphate, one thousand pounds being dissolved in the reservoir by suspending the chemical in gunny sacks hung from the stern of a steam launch. Since the run from the Killen property enters the reservoir about one thousand feet above the dam and intake, most of the germicide was used in that portion of the reservoir between the run and the intake.

Several days after this treatment was completed the Hinkston Run supply was again permitted to be used for drinking at the steel mills and in the borough of Rosedale, which is in the valley of Hinkston Run and cannot be supplied with piped water from any other source. This was done because the Rosedale inhabitants had been compelled to resort to hillside springs and heavy rains October 19th and 20th had made these evidently dangerous, and also because the attempt made by the steel company to provide other drinking water had consisted merely of the installation of pails and dippers, and the conditions attending the use of these were found to be as objectionable as the use of Hinkston Run, after the chemical treatment.

The typhoid fever cases discussed above in detail because they were on the drainage areas of some of the public water supplies were not the only rural cases investigated. Department officers made a careful census of 33 cases in four townships in the vicinity of the city and not within the districts where the public water supplies of the community are available. Except for the cases already mentioned these rural cases were incident to rather than factors in the general outbreak.

GENERAL REMEDIAL MEASURES.

At Strayer Run reservoir of the Morrelsville and Cambria Borough Water Company, an arrangement for the disinfection of the inflowing water with copper sulphate was provided and the body of the reservoir was disinfected with this chemical, this being done because of the prevalence of typhoid fever in the community.

On the evening of October 13th, the Commissioner of Health gave out the following notice to the newspapers:

"Typhoid fever has recently increased to an alarming extent in Johnstown. More than 40 cases are now under treatment and additional cases are under observation. Several cases of typhoid fever have recently been discovered in the watersheds supplying the city of Johnstown with water and in dangerous proximity to the public supply.

"On receipt of the information, Dr. Samuel G. Dixon, State Health Commissioner, telephoned to this city urging the citizens of Johnstown to boil all water used for household purposes for a period of thirty minutes before using.

"Further, because of the dangers of milk becoming infected and because of the absolute lack of dependable methods for efficient sterilization of milk bottles, even with large supplies, together with the fact that many milk bottles have been collected from homes in which typhoid fever is now under treatment, Dr. Dixon joins Dr. Jones in urging householders to boil or pasteurize all milk used for domestic purposes for a period of thirty minutes prior to using, even though it may have been pasteurized by the dealers.

"Milk may be efficiently pasteurized in any home by standing the bottles in a saucer in a kettle of water half the depth of the milk and then boiling the water for thirty minutes."

The toilets on the cars of the Southern Cambria Railroad were directed to be closed during the passage of the cars over the watershed of the Salt Lick reservoir.

The efforts of the water companies to abate the dangerous insanitary conditions found on the drainage areas at properties where typhoid fever existed are duly acknowledged. The companies are planning to buy additional properties in order to

safeguard the stream from pollution, and it will be necessary that much more rigorous inspections be conducted in the future. An impounding reservoir to replace the present intake dam on Laurel Run is planned, and this will be an improvement insofar as sedimentation accomplishes a certain degree of purification.

Sedimentation and chemical disinfection, however, cannot be considered as a satisfactory permanent method of treatment for a domestic water supply from drainage areas of the character of these, and this Department has directed that the studies of the water works shall be continued looking toward providing an additional protective measure in the future, probably including a positive purification of the waters.

All persons whose wells and springs were found to be dangerous were notified and instructed that the water should not be used for domestic purposes without being boiled.

All dairymen and milkmen were notified through the local board of health not to leave bottles at any house placarded for typhoid fever nor to remove bottles therefrom. The board of health was advised of the necessity of instituting a thorough clean-up of the dairy supply in the city and of maintaining more efficient supervision over this trade.

DISCUSSION.

The turning off of Hinkston Run water October 15th, was followed by the cessation of typhoid fever cases in the district supplied with this water, after the elapse of the incubation period, which may be considered to include the case on November 3rd as well as that on October 25th. There was only one subsequent case in the district, on November 28th.

Onsets in the district supplied from Salt Lick fell off correspondingly, which may be attributed partly to the increase in the strength of the chemical disinfectant. However, the publicity which the epidemic had attracted and the notice to boil all water and milk also may have been partly responsible for the abatement of the outbreak. However, there were twenty subsequent cases in the Salt Lick district. The epidemic included a number of secondary cases, of which ten were in this water district and most of them later.

Although the evidence is not as clear-cut as has been the case in some epidemics, it is believed that it is sufficient to establish the responsibility on the public water supplies.

The disastrous results which may follow the criminal neglect of physicians in not promptly reporting typhoid fever cases is most forcibly illustrated.

TYPHOID FEVER AT KUTZTOWN.

Kutztown, a manufacturing community of 2,500 inhabitants 15 miles northeast of Reading on Sacony Creek, a tributary of Maiden Creek in the Schuylkill River drainage area, experienced a typhoid fever outbreak of 34 cases from April to December, 1913. The description of this outbreak and of the town in general and the water works in particular was given in the report of the Department for that year.

WATER WORKS.

The Kutztown Water Company furnishes the public supply. Water is obtained from Sacony Creek about a mile below the borough, from Kemp's Run and from springs and a drilled well. Two pump stations are maintained on Sacony Creek, the upper one being near the mouth of Kemp's Run and operated by steam, and the lower one about 2000 feet below and operated by water power developed at an old grist mill. The lower pumping station is used at times when water power is available and is operated during the night. The upper pumping station is operated in daytime by the same operator. The supply for the lower pumping station is obtained through 2,000 feet of pipe extending to the suction well at the upper station.

No purification of the water is effected other than the treatment of the supplies with hypochlorite of lime.

The pollutions of Sacony Creek flowing through a populous farming district along the 8 miles of its course from its head waters and also in the borough of Kutztown have been inspected by officers of this Department and much has been accomplished in the abatement of these pollutions, although adverse jury verdicts at variance with the facts as testified to by Department inspectors have been a serious handicap.

Subsequent to the epidemic of 1913 the water company was required to engage the services of an engineer experienced in the treatment of water to undertake responsible supervision of its plant and establish its operation in a manner so as

to be not prejudicial to public health. The company was also ordered, in order to fulfill its obligations to the public, to have prepared and submit to this Department for approval plans and specifications and a report for a pure and adequate source of supply which would not be prejudicial to the public health. The company was also directed to be prepared to at once undertake the execution of the proposed plan after its modification, amendment or approval by the State Department of Health. Shortly after this the officials of the water company made overtures to the borough as a result of which the borough was expected to secure control of the operation of the water works. At the end of the year the system was still being operated by the water company.

A number of dug and drilled wells still continue to be used throughout the borough as sources of supply.

Because of the dangerous character of the public water supply the people have frequently been notified to continue to boil all water used for domestic purposes, this being considered the only safe procedure to follow because experience has demonstrated that implicit reliance cannot be placed in chemical disinfection alone as a preventive of water-borne diseases.

Sewerage.

There is no public sewer system in the borough. Outdoor privies and cesspools are in common use. In many instances sewage is directed into crevices in the underlying limestone formation. Frequently old wells are converted into cesspools.

Geographical Distribution.

The information collected by the Department's representative during the investigation is the basis for the following tables:

ONSETS.

Date.	No. of Cases.	Date.	No. of Cases.
August 19,	1	September 24,	1
September 12,	4	September 25,	3
September 13,	2	September 28,	1
September 15,	3	October 1,	1
September 18,	3		
September 21,	1		
September 22,	1	Total,	21

AGE AND SEX DISTRIBUTION.

Age.	Male.	Female.	Total.	Occupation.	Male.	Female.	Total.
0- 4,	1	0	1	Students,	4	4	8
5- 9,	2	2	4	Housewives,	0	5	5
10-14,	0	3	3	Laborers,	2	0	2
15-19,	2	0	2	Merchants,	2	0	2
20-24,	1	0	1	Children,	1	1	2
25-29,	0	1	1	Foundryman,	1	0	1
30-34,	1	0	1	Teamster,	1	0	1
35-39,	2	3	5				
40-44,	1	0	1				
45-49,	0	0	0				
50+,	1	1	2				
Total,	11	10	21	Total,	11	10	21

Geographical Distribution.

The 21 cases of fever occurred in 7 families, the total population of which was 26. Four entire families, three of which consisted of four members each and one of six members, were stricken with the disease. These families all lived on Noble Street north of and within 500 feet of Normal Avenue. Of 60 cases reported from the borough in the years 1913 to 1915, inclusive, 53 have been investigated by the Department and 39 or 65 per cent. of them it was found occurred on Noble Street or on Normal Avenue, just off of Noble Street.

Water Supply.

In 10 instances it was found that water was obtained from a well on the dividing line between the Steckel and Heffner properties and in 10 others from a well on the W. Bieber property. In the one remaining instance water was obtained from a well on the D. Levan property. Samples of water collected from these wells and analyzed in the Department laboratories showed that they were heavily polluted.

Milk Supply.

There are two principal milk dealers supplying milk in the town. They are H. Burke and J. Swoyer. In six instances milk was obtained from Burke only and in one instance from Swoyer only and in 14 instances from both Burke and Swoyer.

Foodstuffs.

The investigation indicated that none of the patients had eaten either ice, ice cream or shell-fish and no vegetables other than those obtained from their own gardens.

It was probable that none of the cases were due to secondary infection and it is believed that in no instance was infection carried from one house to another.

Discussion.

Although the public water supply for Kutztown is known to be extremely unsatisfactory, it is quite evident that the 1915 outbreak could not be attributed to the public water supply, since the cases were grouped around a few infected wells in the southwestern portion of the borough. Had the water supply been responsible for the introduction of infection, the cases would have been more widely scattered throughout the territory supplied. The wells responsible for this outbreak are located in a low portion of the town near the wells which inaugurated the outbreak occurring in 1913.

About 40 feet north of the Steckel-Heffner well is a dug well on the property of W. Bieber, and about 30 feet north of this well is still another on the property of D. Levan. These wells are in low ground west of Noble Street and at a lower elevation than the street. During heavy rains surface water collects on the ground near the wells and quite frequently the water in the wells becomes turbid.

First Case.

On August 19th Charles Sitler, residing about 200 feet south of the Steckel-Heffner well, was taken down with typhoid fever. There is a privy and cesspool on the Sitler property at a higher elevation than the wells from which contaminated water was subsequently obtained by nearly all of those who contracted the disease. This case occurred about a month earlier than the first of the subsequent cases. Rainy weather occurring in the interval between August 19th and September 12th afforded opportunity for the infection to be washed into the wells from the Sitler property.

Precautions.

On August 7, 1915, prior to the outbreak of typhoid fever, the Department realizing the dangerous conditions at Kutzstown addressed the following communication to the secretary of the board of health.

"August 7, 1915.

"Fred T. Williamson, Secretary,
"Board of Health,
"Kutztown, Penna.

"Dear Sir: Because of the recent scouring rains and the menacing conditions of Kutztown's public water supply, the responsibility falls heavily upon your board, at the present time especially, to see to it that the danger lurking in the water

is kept constantly and conspicuously before the public and that the people are informed that only by boiling the water to be used for drinking purposes, culinary and personal, can reasonably certain protection from disease be secured.

"Yours very truly,

"SAMUEL G. DIXON."

This letter was published in the local paper on August 21st. In the edition of the Kutztown Patriot for September 25th warning was published against the use of water from the public supply or from private wells without first boiling thoroughly. Placards were posted at conspicuous places by the local board of health along the streets, warning the citizens of the presence of typhoid fever and advising them to boil all drinking water.

The handles were removed from the pumps at the Steckel-Heffner well, these families having been removed to the Reading Hospital. The Bieber well and the Levan well were the only source of supply on their respective properties and were not closed, but notice was given not to use water from these wells without previous boiling, and the owners were instructed not to allow the water to be carried away by the public. Placards were placed on these wells warning persons against the use of the water. All privies and cesspools on the properties where the disease was prevalent were thoroughly treated with lime, which was also spread on the ground surface wherever wash water had been thrown.

In order to reduce the possibility of the infection entering the town's water supply taken from Sacony Creek below the borough, the amount of germicide introduced into the water was considerably increased and the water company was warned to use every possible care to assure the continuous introduction of the germicide. Another notice was inserted in the local paper, calling the citizens' attention to the presence of typhoid fever above the intake and also the necessity of boiling all water used for domestic purposes.

Because the City of Reading obtains the large portion of its water supply from Maiden Creek, into which Sacony Creek empties, the following letter was sent to the superintendent of the Reading Bureau of Water:

"October 9, 1915.

"Mr. Emil Nuebling, Superintendent, Bureau of Water, Reading, Pa.

"Dear Sir: There are some cases of typhoid fever in Kutztown, and while the Department is requiring all precautions possible to prevent the entry of typhoid fever into State waters, it is at the same time necessary that you observe special precautions and the utmost vigilance at your Maiden Creek water filters to prevent the possible passage of any polluted water into the distributing system.

"Will you please see that none of the filter units are operated above their rated capacities and that the amount of chemical germicide be increased to the maximum which can be used without causing tastes or odors in the water. These special precautions should be followed until all danger of infection is passed.

"Very truly yours,

"SAMUEL G. DIXON."

TYPHIOD FEVER AT LEWISTOWN.

Seventeen cases of typhoid fever developed in Lewistown during May, and on June 9, W. N. Garrett, secretary of the board of health, requested the assistatnce of this Department. The undersigned assistant engineer made an investigation on June 9, 10, 11, 14 and 15. In the fall there was a second outbreak, which was investigated by Dr. H. L. Hull, although the undersigned inspected the water works again at this time.

General Description.

Lewistown, the county seat of Mifflin County, is along the main line of the Pennsylvania Railroad, 60 miles west of Harrisburg and on the north bank of the Juniata River, and on both banks of the Kishacoquilla Creek, a tributary thereof. The normal population is about 8,000, although it sometimes reaches 10,000 during busy times at the works of the Standard Steel Company at Burnham, nearby.

From Lewistown the valley of the Kishacoquillas, up through Burnham, Yeagertown, Highland Park to Reedsville, is almost continuously built up. North of Reedsville in the valley of Laurel Run are Naginey and Milroy.

The Lewistown-Reedsville Water Company supplies about 17,500 consumers in a population of 20,000 by means of a continuous system throughout this district. The supplies are furnished by gravity from four streams,

On Minehart Run, five miles southwest of Lewistown, is an 8,000,000-gallon impounding reservoir from which there is a 10-inch supply main of 280,000 gallons a day capacity to Lewistown. The drainage area above the reservoir is uninhabited, has an area of seven square miles, and consists of precipitous wooded slopes. The company owns about 1,000 acres above the reservoir.

On Coopers Gap Run, eight miles northwest of Lewistown, there is an intake dam diverting water to a supply main which is 14 inches at the upper end and reduces to 12 inches and 10 inches and has a capacity of 270,000 gallons a day. It leads into Reedsville and south along the west bank of the Kishacoquillas Creek to Burnham and Lewistown. The drainage area above the intake is 5.3 square miles of mountainous woodland, mostly State Forest Reserve. There is one habitation, where a recent inspection did not reveal a pollution.

On Laurel Run, 10 miles north of Lewistown, there is an intake dam from which a five-mile supply line of 14-inch, 12-inch and 10-inch pipe leads through Milroy and joins the Coopers Gap Run line at Reedsville. It has a capacity of 1,550,000 gallons. The drainage area above the intake comprises 20 square miles of mountainous woodland, mostly State Forest Reserve. It includes three miles of the State Highway from Lewistown to Bellefonte. Four miles above the intake is a farmhouse used by hunters and fisherman. An inspection did not show any pollution from this property.

On Treaster Valley Run, 12 miles northeast of Lewistown, there is an intake from which a pipe line, increasing from 12 inches to 16 inches, extends through Naginey to Reedsville and south along the east bank of Kishacoquillas Creek to Burnham and Lewistown. It has a capacity of 1,400,000 gallons but is said to leak badly. Above the intake is a drainage area of 14.7 square miles, mostly wooded mountain land, of which a large part is State Forest Reserve. A public highway extends past the intake to six properties of which the uppermost is two miles above the intake and is occupied by the State Forest Reserve warden. The cleared land around these properties is not extensive. An inspection revealed a pollution upon one of them and steps were taken to abate it.

There are three distributing reservoirs; one at Lewistown of a millon gallons capacity, one at Burnham of two million gallons capacity, and one at Reedsville of 1,335,000 gallons capacity. The latter is not regularly in service.

Bacteriological examinations by the Department laboratories of samples collected by Department officers during the typhoid fever investigation gave the following results:

Date.	Location.	Source of Supply.	Bacteria per c. c.	B. Coli. per c. c.
	Lewistown.			
June 9	Tap, Market & Valley Sts.,	Doubtful,	6	0
	Tap, 435 Valley St.,	Coopers Gap Run, Laurel Run.	48	0
	Tap, 232 Brown St.,	Doubtful,	11	0
	Tap, Market & Main Sts.,	Doubtful,	8	0
	Tap, Yeagertown,	Coopers Gap Run, Laurel Run.	8	0
June 10	Coopers Gap Run intake,	Coopers Gap Run,	72	0
	Laurel Run intake,	Laurel Run,	48	0
	Treasters Valley intake,	Treaster Valley Run,	360	0
	Tap near Rosemont,	Treaster Valley Run,	64	0
	Tap near Rosemont,	Coopers Gap Run, Laurel Run.	32	0
	Lewistown.			
June 14	Tap, 4th & Juniata Sts.,	Minehart Run,	400	0
	Tap, Walnut & Valley Sts.,	Coopers Gap Run,	3	0
	Tap, Pannebaker & Pine Sts.,	Doubtful,	300	0
June 15	Tap, Market & Main Sts.,	Doubtful,	8	0
	Tap, South Main St.,	Doubtful,	8	0
	Tap, 44 Feder Ave.,	Doubtful,	2	0
	Tap, 3rd & Juniata Sts.,	Minehart Run,	20	0
Sept. 15	Tap, 3rd & Juniata Sts.,	Minehart Run,	26	0
	Tap, Market & Main Sts.,	Doubtful,	64	0
	Tap near Reedsville,	Treaster Valley Run,	15	0
	Tap, Reedsville,	Coopers Gap Run,	56	0
	Lewistown.			
Nov. 12	Tap, 3rd & Juniata Sts.,	Minehart Run,	2	0
	Tap, Market & Main Sts.,	Doubtful,	88	0
	Tap, Pannebaker & Pine Sts.,	Doubtful,	240	0
	Tap, Reedsville,	Coopers Gap Run,	5	0
	Tap, Reedsville,	Laurel Run,	32	0
	Tap, Burnham reservoir,	Treaster Valley Run,	420	0

TYPHOID FEVER.

During the investigation of the epidemic in 1915, covered by this report, the seventeen cases which were reported in June were censused and the information derived from the census is given in the tables which follow:

Dates of Onset.	Number of Cases.
May 15,	1
May 17,	1
May 18,	2
May 19,	1
May 20,	2
May 21,	1
May 22,	3
May 23,	2
May 24,	3
May 31,	1

Occupation.	Number of Cases.
Student,	5
Servant,	2
Housewife,	4
Laborer,	1
Time keeper,	1
Mill hand,	1
At home,	3

Age Period.	Number of Cases.		
	Male.	Female.	Total.
0- 4,	0	2	2
5- 9,	2	1	3
10-14,	1	1	2
15-19,	1	1	2
20-24,	1	1	2
25-29,	0	2	2
30-34,	1	1	2
35-39,	0	0	0
40-44,	0	0	0
45-49,	0	0	0
50—over,	0	2	2
Total,	6	11	17

Water Supply. — *Number of Cases.*
Public. — 17.

Milk Dealer. — *Number of Cases.*
H. W. Ellinger. — 17.

None of the patients had eaten oysters or uncooked vegetables, and only three had eaten ice cream. Six of the households had obtained manufactured ice, while the remaining seven households had not yet started the use of ice for the summer.

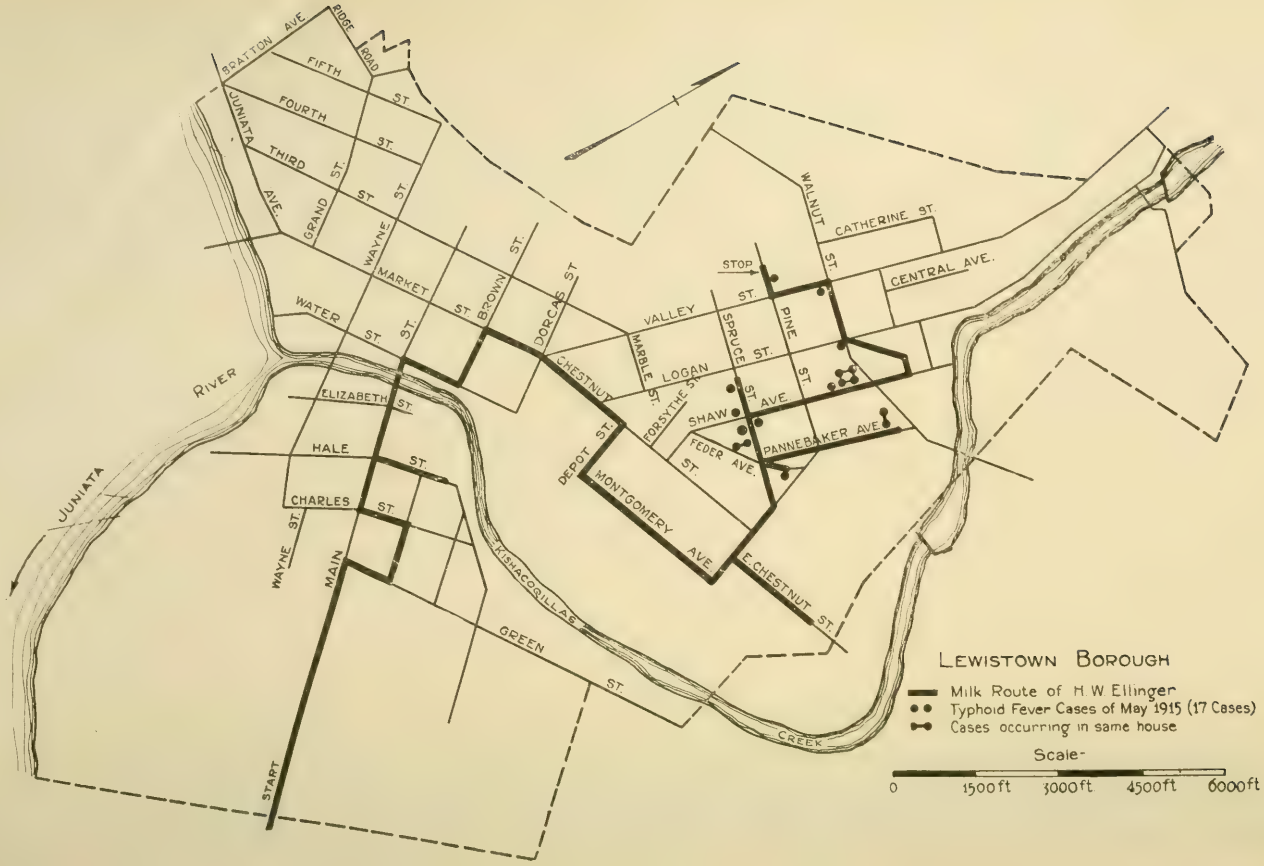
All of the typhoid fever cases occurred in the northeastern section of the borough on Feder Avenue, Pannebaker Avenue, Spruce Street, Shaw Avenue, Logan Street at the corner of Walnut Street, Valley and Pine Streets.

The records of typhoid fever cases for the first six months of 1915 in the four townships supplied by the Lewistown-Reedsville Water Company indicate only two cases, these in the latter part of May in Yeagertown, Derry Township.

The typhoid fever district, the northeastern section of Lewistown, probably receives its water supplies from all three of the northern sources, and, perhaps, some from Minehart's Run also. However, water from each of the four sources undoubtedly reaches much more extensive districts than the particular section where the typhoid developed. The two cases in Yeagertown are in the central part of the district stretching along the Coopers Gap Run and Laurel Run pipe line from Reedsville to Burnham. The typhoid cases, closely grouped as they are, cannot be attributed to the widely distributed water supplies.

Milk Supplies.

H. W. Ellinger, the milk dealer who supplied all seventeen cases of typhoid fever, started in the dairy business April 1, 1915, and his wagon delivery in Lewistown on April 18. His farm is at Maitland, four miles northeast of Lewistown and near


BRATTON AVE.
RIDGE ROAD
FIFTH ST.
FOURTH ST.
THIRD ST.
JUNIATA AVE.
GRAND ST.
WAYNE ST.
MARKET ST.
BROWN ST.
DORCAS ST.
WATER ST.
RIVER
JUNIATA
ELIZABETH ST.
HALE ST.
CHARLES ST.
WAYNE ST.
MAIN ST.
START
TUSCARORA CREEK
GREEN ST.
CHESTNUT ST.
MARBLE ST.
FORSYTHE ST.
DEPOT ST.
MONTGOMERY AVE.
VALLEY ST.
LOGAN ST.
SHAW AVE.
FEDER AVE.
PANNEBAKER AVE.
E. CHESTNUT ST.
SPRUCE ST.
PINE ST.
WALNUT ST.
CATHERINE ST.
CENTRAL AVE.
STOP
LEWISTOWN BOROUGH
Milk Route of H.W. Ellinger
Typhoid Fever Cases of May 1915 (17 Cases)
Cases occurring in same house
Scale-
0
1500ft
3000ft
4500ft
6000ft

Jacobs Creek. A small tributary flows close by the property. There is a dug well 22 feet deep with a tight plank cover. The privy is 40 feet from the well and the vault has a depth of eight or ten feet and holds water continually to about the level of the small stream 30 feet distant. The vault is accessible to flies.

The dairy has thirteen cows. The condition of the barn was only fair. The morning milking was often done by Mr. Ellinger and his wife but the evening milking was often done by Mrs. Ellinger alone. No special precautions were taken in the milking. The milk was put in bottles and placed in the cellar uncapped to cool. After cooling the bottles were capped. There was no machine for filling or capping and this was usually done by Mrs. Ellinger, but Mr. Ellinger sometimes helped. The morning and evening milk were kept separate. Mrs. Ellinger also attended to the washing of the bottles, cans and buckets. The bottles were boiled in water and afterward rinsed with cold water from the well. The cans and buckets were washed with the hot water. About forty-five quarts of milk were bottled each day and eight to ten quarts were handled from a can. The condition of the milk room and cans was good, but the method of handling was such as to give chance of pollution from those bottling the milk. There are five children in the family but they were never allowed to do anything in connection with the handling of the milk.

The route of service covered the eastern and northeastern sections of the borough. Mr. Ellinger usually drove the milk team, but at times this was done by Mrs. Ellinger From the start on South Main Street the following streets were covered in order: Green, Brown, Charles, Hale, Water, Chestnut, Depot, Montgomery, East Chestnut, Spruce, Feder, Pannebaker, Spruce, Shaw, Walnut, Valley and Pine. The map accompanying this report shows the different streets upon which milk was sold and the location of the various typhoid fever patients.

Not only were the cases confined to the streets on which Ellinger served milk, but they were also confined to the latter half of the route as he covered it. It was ascertained that in delivering the milk care was taken to first serve all the evening milk and when this was exhausted to serve the morning milk. It was stated that the supply of evening milk usually lasted until the wagon arrived at or near Feder Avenue and that, therefore, customers along Feder Avenue and the remaining streets of the route received morning milk. These are the streets, it will be remembered, where all the typhoid cases occurred.

According to the statements of Mr. Ellinger and of the family physician, there had been no illness of any kind in the family recently. However, in October, 1906, Mr. Ellinger had typhoid fever. At that time the family resided in Lewistown Borough, moving to the farm in 1909. Mr. Ellinger was suspected of being a "typhoid carrier," but examination of a sample of his feces collected by the county medical inspector following the Department's investigation in June was not conclusive.

The farm next to the Ellinger farm is tenanted by George Marker. In August, 1914, Mr. Marker, Mrs. Marker and three children, Charles, Edward and Edna, were stricken with typhoid fever. This house is about 800 feet distant from the Ellinger property. It was stated that there was practically no communication between the two families and that even the children seldom associated together. The Markers obtained their milk from Ellinger. This was usually delivered to them in the morning while on the way to Lewistown. Occasionally one of the Marker children came to the Ellinger property and obtained the milk in a can. None of the Marker family ever helped the Ellingers in their milking nor could any information be gained which would lead to the inference that the infection had in any way been derived from this source.

During the course of the investigation of the November epidemic a sample of the feces of Mr. Ellinger was again obtained and sent to the Department laboratories. The analysis of this showed the presence of typhoid bacilli. Thus it was proven that even after a lapse of over nine years Mr. Ellinger was a typhoid carrier and continued to eliminate the disease germs.

The results of this analysis showed clearly the source of infection of the milk in May. Undoubtedly the milk which caused the earlier epidemic had been infected by germs eliminated by Mr. Ellinger. It is also very probable that the four cases of fever in 1914 at the house of his neighbor, Mr. Marker, were contracted from the same source.

REMEDIAL MEASURES.

At the beginning of the investigation notices were placed in the papers warning the people to boil all water used for domestic purposes. Notice was given to all milk venders that no bottles should be carried away from houses in which typhoid fever existed. All such houses were placarded. On June 5, Mr. Ellinger, of his own volition, on hearing of assertions of his milk being the cause of the disease, had discontinued the sale of milk and appealed to the local authorities to ascertain the facts of the case. The local authorities were advised to prevent his resuming the sale of milk until it was proven that no danger existed therefrom. The local health officer was instructed to see that all the sick rooms of the patients were thoroughly screened to prevent the admittance of flies. He was also instructed to make a careful inspection of the sanitary conditions of the properties and to see that proper methods of waste disposal were carried out.

The approval of the public water works and sources of supply granted by this Department to the Lewistown-Reedsville Water Company was only temporary, requiring the company to make monthly bacteriological examinations of the various sources; to maintain a sanitary patrol of the drainage areas above all the intakes, file reports of these inspections monthly in the office of the State Department of Health and report immediately the existence of any pollutions or cases of communicable disease; and also to prepare a report and plans for permanent improvements to safeguard the various sources from possible pollution due to the presence above the intakes of habitations and roadways and the practice of hunting and fishing, and in the meantime to install and maintain in readiness for emergency use apparatus for the treatment of the supplies with a chemical germicide.

TYPHOID FEVER AT LITITZ, LANCASTER COUNTY.

In the borough of Lititz, Lancaster County, nine typhoid fever cases developed in August and September. The undersigned assistant engineer, on October 11, undertook an investigation of the outbreak and of the borough water works.

Lititz is situated in Lancaster County twelve miles north of the City of Lancaster. It has a population of 3,000 and is the home of diversified small industries.

The borough obtains its public water supply from a dug well 20 feet in depth, about 300 feet west of the original Lititz springs and, undoubtedly, fed from the same underground watercourse. There is an underlying stratum of fairly compact limestone extending over the entire basin, which is three miles wide and five miles long, extending to Manheim. Ground water from this area finds its first exit in the three Lititz springs. Ample proof of the direct and close connection with the surface drainage is shown by the rapid increase in the turbidity of the springs after a storm, and the gradual decrease and disappearance as the wash is carried away. The water is hard, as would naturally be expected from a limestone formation. The ground is fertile and pretty generally cultivated over the entire area. Farms and farmhouses abound, all of them obtaining their water supply from dug or drilled wells and discharging their sewage and refuse into open pits or closed cesspools. Sink-holes and their drains offer means for contamination from animal and human sources.

The springs have been improved by rubble walls and embankments surrounded by a park of eight acres owned by the Lititz Moravian church. The springs have never been known to go dry. Picnics are common in the park grove.

The borough water supply is pumped from the well in the limestone by either of two pumps into a supply main and backs into a 150,000-gallon stand pipe 16½ feet by 100 feet. Occasionally the well water drops low enough to necessitate intermittent pumping, three hours in the morning and two hours in the afternoon. The alkalinity of the water runs as high as 150 p. p. m. The supply main is twelve inches and the laterals range down to four inches.

There are still a few wells used in the borough for private supplies, but this number has been gradually diminishing every year. The local authorities have found by analyses that many showed traces of sewage pollution and have closed them up. The following results were obtained from water samples collected on October 12, at Lititz and analyzed at the Department laboratories:

	Bacteria per c. c.	B. Coli per c. c.
Lititz Springs, spring A,	8	0
Lititz Springs, spring C,	56	0
Well, home of Phares Enck,	56	0
Lititz Borough supply, tap of A. Perry, Orange St.,	32	0
Lititz Borough supply, supply main,	24	0
Lititz Borough supply, pump well,	26	0

Colon bacilli were found in several samples collected and examined by the Department during a period of several months in 1910, particularly after heavy rains.

Most of the sewage of the town is disposed of in cesspools or privy vaults.

Typhoid Fever.

A census of the eight cases in the borough and one in Warwick Township was made by Dr. C. Howard Witmer, of Lancaster, acting for the county medical inspector, and furnishes the following data:

Date of Onset.	No. of Cases.	Age.
August 17,	1	56
August 20,	1	6
August 21,	1	12
August 23,	1	8
August 24,	2	12-25
August 28,	1	25
September 1,	1	39
September 6,	1	19

Occupation.	No. of Cases.
At home,	2
At school,	4
Paper mill,	1
Pretzel bakery,	1
Chocolate factory,	1

Milk Dealer.	No. of Cases.
J. C. Brubaker,	4
Charles Smith,	1
Phares Neidamyer,	1
Andrew Gochmann,	1
Brubaker and Neidamyer,	1
None,	1

Ice Cream Dealers.	No. of Cases.
Longnecker,	3
Longnecker and Trimmer,	1
Saylor,	1
None,	4

Of the nine cases there were four males and five females.

All of the eight cases in the borough used the public water supply both at home and at work. However, with the single exception of a well used by four families, this is the supply utilized for drinking purposes in the borough.

Shell-fish were used by two cases only, who bought from different dealers.

The eight cases in the borough were widely distributed except for the first two which were in houses next door but one and had dates of onset three days apart. Four of them had been out of town within the probable period of infection and may possibly have been imported cases, as two of them very likely were.

J. C. Brubaker supplied 500 of the 800 quarts of milk consumed in the borough. Inspection was made of this supply. His farm and dairy are located about one mile east of the borough. There are 35 or 40 cows from which he obtains 300 quarts of milk a day and he buys 200 quarts additional from four other farmers. There is no record of typhoid fever or other sickness at any of these farms within the past year. No milk is sold to any of the town ice cream dealers. The milk depot was found in good condition. All milk is delivered in bottles which are washed and then subjected to live steam before being refilled and sealed.

Except that several of the cases were imported, it was not possible to reach any definite conclusions as to the source or sources of the infection.

A number of cases of typhoid fever in Lititz several years ago were carefully investigated by the Department and were traced pretty conclusively to private wells. Samples of a great many of the wells were examined at this time and the householders were notified as well as the local board of health. The wells are in fissured limestone in close proximity to privies and cesspools. It appears that the local board of health has continued the campaign against them.

Influential people in the locality are well aware that suspicion attaches to the public water supply. The Moravian church, which controls all the land in the immediate vicinity in the valley above the pumping station and source of supply, has prevented building operations in this district, in order to protect the water supply. It is believed that some more positive method of protection or of purification will be demanded in the near future.

TYPHOID FEVER IN OAKMONT AND VERONA.

The borough of Oakmont, with a population of 3,900, lies on the east bank of the Allegheny River five miles up-stream from the Pittsburgh city line. Commuters comprise a considerable part of the population but there are several manufacturing plants. Adjacent to it at the down-stream boundary, Plum Creek, lies the borough of Verona, also on the river bank. It has a population of 3,000. In this town are situated several manufacturing plants and especially the main shops of the Conemaugh Division of the Pennsylvania railroad which follows the river bank. Shops make quite a distinction between the two boroughs, but otherwise they have much in common. The sewage of each of them is discharged into the river. Plum and Penn Townships lie east of Oakmont and Verona, respectively, and are separated by Plum Creek. There are shops of the Pittsburgh, Bessemer and Lake Erie Railroad in Penn Township.

Public Water Supply.

The Suburban Water Company of Allegheny County supplies Oakmont and Verona and a considerable area in Plum and Penn Townships, including several villages. There is a pumping station on the river bank in Oakmont near the up-stream boundary. The supply was drawn from intake cribs in the bed of the Allegheny River opposite the pumping station until January 18, 1915, when there was placed in operation a modern gravity rapid sand filtration plant constructed south of the pumping station in accordance with the decree of the Department and plans approved by it.

The new filter installation includes sedimentation basin, clear well, elevated wash water tank, chemical treatment apparatus and also million gallon concrete equalizing reservoir at North Bessemer in Penn Township about three miles southeast of the pumping station. There is also an older million gallon equalizing reservoir on an elevation east of Verona in Penn Township. There are four filters with a total capacity of two million gallons a day. Coagulation is accomplished with alum and there is provision for adding lime or soda ash in case of a lack of sufficient natural alkalinity in the river water. There is also apparatus for the addition of chlorinated lime as a germicide.

Before the filter plant was placed in operation the water had been receiving for several years germicidal treatment with chlorinated lime in a rather crude way, at the rate of about 12 pounds of chemical a day, the average consumption being about 1,400,000 gallons, a large part of which is supplied to the Pittsburgh, Bessemer and Lake Erie shops. The consumers number about 7,800. The tests and adjustment of the new filters were started December 30, 1914, and from then on until they were placed in continuous operation, 19 days later, there were many alterations, raw water being taken by the low service pumps while the filters were operating and by the high service pumps at other times and corresponding alterations for chemical dosing of the waters. Every effort is reported to have been made so that the dosing should be continuous. On and after March 11, 1915, the application of chlorinated lime was made in the filtered water basin instead of in the raw water suction lines as previously.

There is a labratory at the filter plant for making alkalinity and turbidity determinations, and bacteriological examinations of the water supplied to the consumers are made weekly in Pittsburgh.

The results of bacteriological examinations made at the direction of the engineer supervising the establishing of the filter plant showed the occasional presence of colon bacilli throughout the period of typhoid fever infection in samples collected from the distributing system. The results of the Department's examinations of samples collected during the investigation beginning March 1st do not indicate contamination at that time.

Grogan's Spring.

Grogan's spring is near the top of a hill east of the Pennsylvania railroad and not far from the corner of First and South Streets in Verona. The spring discharges into a concrete catch basin four by two feet by eighteen inches deep, from which an overflow pipe discharges to a second small concrete box, which in turn overflows to a surface drain. Water is obtained from the overflow pipe of the first basin or by dipping into the basin itself, which is provided with only a loose wooden cover. There is a house 25 feet north of the spring and another a short distance south of the spring. But the outside privies provided for them are considerably lower than the spring. About 150 feet southeast of the spring are six houses and at the nearest of these is a cesspool, formerly a dug well, about 125 feet from the spring and 30 feet higher. There are other houses, cesspools and privies higher than the spring but still farther from it.

Bacteriological analyses of several samples collected and examined by the Department during the investigation beginning March 1st did not show evidence of pollution. An examination made by the engineer supervising the public water works showed a total count of 100 bacteria per cubic centimeter and B. coli present in one cubic centimeter but absent in 0.1 cubic centimeter. The sample was collected immediately after water had been dipped from the spring which may have caused temporary pollution.

TYPHOID FEVER.

A complete census was made of all cases of typhoid fever which had been reported to the secretaries of the boards of health of Oakmont and Verona subsequent to October 1, 1914, and from data collected, the following tables have been compiled. The use of Grogan's spring in Verona was conspicuous and cases which drank of this water are enumerated separately in the table of onsets.

DATES OF ONSETS AND NUMBER OF CASES OF TYPHOID FEVER.

Date. 1914.	Oakmont.	Verona.	Date. 1915.	Oakmont.	Verona.	Date. 1915.	Oakmont.	Verona.
Oct. 16	1		Jan. 1	1	1+ 1*	Feb. 1	1	1*
Nov. 20	1		2		2	3		1*
Dec. 1	1		7	1		4		5*
14	1		8	1		6		1*
15	1		9	2	1	7	1	1*
16	1	1	10	1	1	8	1	
20	1		12		1	9		2*
21		1	13	1		10		2*
22	1		14	2		11		1+ 4*
23		1	15	2	1	12		1+ 2*
24	1		16	2		13		1*
26	2		18		1	14		2*
29	1		19		1	16		1*
			20	3	1	17		1*
			21	1	1	19		1*
			22	2		20		2*
			23	1		22		1*
			24	2	2	23		2*
			25	2		26	1	
			26	2	2	Mar. 2	1	
			28	1	2			
			29	2				
			30	1	1			
			31	4	1			
						Total	50	56

*These 30 cases in February and one in January used water from Grogan's spring.

The accompanying chart shows the location of the cases in Oakmont and Verona.

Age Period.	Male.	Female.	Total.	Age Period.	Male.	Female.	Total.
0- 4	2	8	10	35-39	3	1	4
5- 9	15	8	23	40-44	1	0	1
10-14	12	7	19	45-49	1	0	1
15-19	10	9	19	50-54	0	1	1
20-24	7	2	9	55-59	2	0	2
25-29	2	6	8				
30-34	3	6	9	Total	58	48	106

Occupation.	Number of Cases.	Occupation.	Number of Cases.
School (public),	48	Milliner,	1
Housewives,	14	Telegraph operator,	1
Children (at home),	13	Engineer,	1
Laborers,	7	Apprentice,	1
Clerks,	6	Boiler maker,	1
Agent,	1	Printers,	2
At home,	1	Teamster,	1
Carpenters,	2	Merchant,	1
Electrician,	1	Roll turner,	1
Janitors,	2		
Stenographer,	1	Total,	106

Water Supply.	Number of Cases.
Public (Suburban Water Co. of Allegheny Co.),	62
Public and Country Club well,	1
Public and Pittsburgh public,	2
Public, Pittsburgh public and Oakmont station well,	1
Public and Oakmont station well,	2
Public and Verona Steel Casting Co., spring,	2
Public and Pifer's spring,	1
Public and Kletzley's spring,	1
Public and Dark Hollow spring,	1
Public and Hardies well,	1
Public and distilled,	1
Grogan's spring and public,	25
Grogan's spring, public and Pittsburgh,	1
Grogan's spring, Best's well and public,	2
Grogan's spring, Rupert well and public,	1
Grogan's spring and Pittsburgh public,	1
Grogan's spring,	1
Total,	106
Summary of cases using public supply,	104
Summary of cases using Grogan's spring,	31

Source of Milk Supply.	Number of Cases.		Source of Milk Supply.	Number of Cases.	
Berg Bros.,	38+	6*	Cunningham,		1*
Farron,	4		Berg Bros. & Farron,	1	
Brown,	4+	1*	Berg Bros. & Brown,	1	
Krebs Bros.,	4		Berg Bros. & Cribbs,	1	
Askin,		6*	Farron & Cribbs,	3	
Singhose,	1+	4*	Farron & Moore,	1	
Cribbs,	8		Farron & Tears,	1	
Moore,	2		Brown & Hall,	1	
Johnson,		3*	Bliskenderfer & Krotts,		2*
Woosley,	2		Condensed,	7+	5*
Griper,	1		Unknown neighbor,	1	
Costello,	1				
Stropp,		1*			
Bliskenderfer,		1*	Total,	76	30*

*These cases in February used water from Grogan's spring.


28
19
82
86
87
98
104
101
75
90
88
100
95
84
74
16A
85
93
78
92
96
71
102
103
20
65
105
26
99
94
49
43
56
64
23



● CASES ATTRIBUTABLE TO CITY WATER (PRIMARY AND SECONDARY)

■ CASES ATTRIBUTABLE TO GROGAN SPRING (PRIMARY AND SECONDARY)

}MORE THAN ONE CASE TO A HOUSE

A- FIRST CASE USING GROGAN SPRING

⊕ LOCATION OF GROGAN SPRING

MAP OF

OAKMONT AND VERONA

SHOWING

LOCATION OF TYPHOID FEVER CASES

DEC. 1914 - FEB. 1915

SCALE

0 300 600 900 1200

The occurrence of 33 cases of typhoid fever in Verona during February and only three cases in Oakmont and the information that 30 of these cases and yet only one earlier case had used water from Grogan's spring cast suspicion upon it. The cases are closely grouped in the vicinity of the spring. A careful study to determine whether it might be possible to attribute these closely grouped cases to some other cause revealed nothing.

The single typhoid fever case earlier than February mentioned as having used Grogan's spring had January 1st as the date of onset. Some one in the household in which this case occurred was accustomed to carry water several times a day from the spring. The container was dipped in the catch basin because this was much the quickest way of filling it. The practice was continued long after the case had fully developed. Subsequently containers from other typhoid households were very likely dipped in the spring. There is definite reliable evidence of one such instance when a man attending two typhoid patients at his home was observed to run his hand through the water in the spring basin while dipping the household utensil.

Suspicion of Grogan's spring was aroused in the vicinity early in February, and about February 11th its use had been practically discontinued. February 23 was the date of onset of the last case investigated in Verona. On February 25 the spring was closed and placarded by local health authorities. There were a number of households with several cases each, and some of these were probably secondary. The evident virulence of the infection justifies attributing these 30 cases to the spring, either directly or through secondary infection, in the absence of definite evidence of any other cause.

The study to eliminate other possible factors in the local outbreak of typhoid fever around Grogan's spring included an analysis of the milk distribution and of the occupations of the patients. The occupations of 15 were varied and the other 15 attended the Verona public school situated directly opposite the spring, from which the children were accustomed to drink before and after school and during recess. The study of the milk distribution revealed nothing significant.

Berg Brothers' customers included 47 typhoid fever cases. The 41 cases left after deducting the 6 attributed to Grogan's spring constituted 39 per cent. of the 106 cases in the epidemic, but 54 per cent. of the 76 cases left after deducting the 30 attributed to Grogan's spring.

Berg Brothers' retail customers number 560 distributed through Oakmont and Verona, but they serve a larger proportion of the Oakmont population than of that of Verona. They wholesale to four grocers a total of about 10 gallons a day in cans which may be estimated to reach 40 additional families, making a total of 600. Estimating five to a family gives 3,000 as the number of individuals who use Berg Brothers' milk, which is 43 per cent. of the combined population of the two boroughs. This rough estimate shows that the proportion of the cases served by Berg Brothers is not unduly large when it is remembered that except for the cases in Verona attributed to Grogan's spring the outbreak was much more severe in Oakmont, the home of the majority of Berg Brothers' customers.

Berg Brothers' dairy was investigated because of the large number of typhoid fever cases served by them, which could not be overlooked at the time of the investigation when returns of data were incomplete.

Berg Brothers operate a milk depot at Fourth Street and Penn Avenue, in Oakmont, handling 178 gallons daily, which is procured from 15 dairy farms. All milk is bottled by a machine scalded after each use. Bottles and cans after washing are sterilized with steam. The milk is mixed just as it happens to come, no systematic relation being maintained between the several sources of supply and the customers.

The 15 farms supply from 5 to 25 gallons a day each, and were all investigated. No typhoid fever was found on any of them and there was a history of typhoid on only one where the wife of the farmer had had typhoid fever in May, 1913, had been well ever since and never had anything to do with the handling of the milk or the washing of the cans.

The use of ice cream, ice, shell-fish, bread, uncooked vegetables and fruits was investigated, but the data gathered, while not complete in every instance, showed clearly that these supplies were not factors of importance in the epidemic.

The public water supply may be held responsible as the principal factor in the spread of the epidemic, it is believed, except for the local outbreak from Grogan's spring. In addition to the local evidence and to the known polluted condition of the Allegheny River, the recent epidemic along it should be noted particularly.

The epidemic of typhoid fever far up the river at Warren occurred in August, 1914. Of course the sewage discharged into the river was undoubtedly infected with the germs of the disease for several months afterward. The epidemic at Kittanning became severe about November 14, 1914, that at Ford City about November 1, 1914, that at Arnold, New Kensington and Parnassus about December 18, 1914, and the epidemic under discussion at Oakmont and Verona became severe about the same time or a day or two earlier. It seems that the epidemic at Oakmont and Verona must have been greatly influenced by the presence of the disease and discharge of typhoid infected sewage into the river at Ford City and Kittanning. It is a question how much influence should be attributed to the outbreak at Warren, but the succession of typhoid fever epidemics down the river is very significant. As set forth in the report for 1914 of the Kittanning and Ford City outbreaks, the river and weather conditions were ideal for the transportation of the infection.

There is reason to believe that the newly constructed filter plant under routine operating conditions will prove a valuable safeguard against the occurrence of another such epidemic at Oakmont and Verona, but experience has proven that a filter plant is not infallible.

TYPHOID FEVER IN PHILADELPHIA.

Prior to the installation of the filtration plants, through which practically the whole of Philadelphia is now supplied with filtered water, there was a very high morbidity rate of typhoid fever, which showed a marked diminution as the filtered water was served over ever-increasing areas. The following table gives, in a summarized form, the total number of typhoid fever cases for the entire city for a fifteen-year period, 1901 to 1915, inclusive. It will be noted that prior to 1909, when the Torresdale filtered water supply was put into service, the case rate was quite high. This year marked the time when the last section of the city received filtered water, and since that date almost the entire city has been furnished with filtered water.

Typhoid Fever in Philadelphia 1901-1915, Inclusive—For 1915 Only January to October, Inclusive.

1901,	3,750	1909,	2,441
1902,	5,017	1910,	1,745
1903,	8,691	1911,	1,377
1904,	6,613	1912,	1,514
1905,	6,181	1913,	1,698
1906,	9,746	1914,	793
1907,	6,719	1915,	618
1908,	3,562		

In the fall of 1913, the State Department of Health made an exhaustive investigation of typhoid fever in the City of Philadelphia and vicinity, the result of which investigation has been set forth in detail in the annual report for that year. At that time a careful study of the public water supply was carried on and in the report referred to there is a large mass of detail respecting this phase of the investigation, and this need not be repeated here. But since any unusual outbreak of typhoid fever in a municipality directs attention to the public water supply, it is pertinent at this juncture briefly to describe the various water supplies given to the city.

Taken as a whole, the City of Philadelphia is furnished with water by plants owned by the municipality. There are two sources of supply, namely, the Schuylkill River and the Delaware River. All of that section of the city known as West Philadelphia, which lies on the west side of the Schuylkill River and comprises six wards (24, 27, 34, 40, 44, 46), is served with water from the Schuylkill River filtered at the Belmont filter plant. It may be remarked that Overbrook, lying in the thirty-fourth ward, gets its water from the Springfield Consolidated Water Company, a private corpration furnishing water to a large territory lying for the most part to the west and north of the city.

There are three other districts with a water supply from the Schuylkill River, known as the Queen Lane, Lower Roxborough and Upper Roxborough districts. All of this territory lies to the east and north of the Schuylkill River and through these three filter plants about 240,000 persons are furnished with water. In the Belmont district over 250,000 persons reside. In the Schuylkill River districts on the east side the territory served with this supply is quite irregular as to distribution by wards. In no one case is an entire ward served from any one of the three filtration plants but parts of wards are served from each district. There is a small section of the forty-second ward that is also served by the Springfield Consolidated Water Company. In 1910, the City of Philadelphia had a population of 1,500,000, so that it appears that nearly one-third of the entire population resided in the districts served with water from the Schuylkill River.

The rest of the city receiving the public supply is furnished with Delaware River water through the one filtration works on this stream. This is known as the Torresdale plant and in it about sixty-five per cent. of the total public water supply furnished to the city is filtered. The Torresdale filtration plant is located on the west bank of the Delaware River near the northern limits of the city about ten miles from City Hall. The water filtered here flows through a large conduit to the Lardners Point pumping station and from here is pumped into what is known as the Torresdale district, which is a large section of the city lying between the Schuylkill and Delaware Rivers, covering an area of possibly twenty-eight thousand acres. The district is sub-divided into several smaller areas for the purpose of

distribution. These are known as the Wentz Farm high and low service districts, the Oak Lane high service district, and the Main Torresdale district, being enumerated in accordance with their location from the filtration plant down-stream. The Main district is by far the most thickly populated, and for the purpose of discussion may be further sub-divided into the Central and the South Philadelphia sections. All of the sub-districts just referred to are furnished with the same water, some directly through the pumping mains, and others by way of storage reservoirs.

Additions to the various filter plants have not been made in the same ratio as the population of the city has increased and, consequently, these plants are overworked. This is particularly true of the Torresdale plant. At each plant the filtered water is treated with chlorine gas as a precautionary measure before it goes to the consumer.

The South Philadelphia district, with which this report specifically deals, lies between the two rivers below South Street. It includes nine wards (1, 2, 3, 4, 26, 30, 36, 39, 48), and has a population of about half a million. This district is not furnished with water from the Torresdale plant through exclusive mains but receives its supply through large conduits, locally known as "express mains," that lead from Lardner's Point pumping station through the northern and central sections of the Torresdale district, at numerous points having branch connections feeding this territory and finally entering the South Philadelphia district. Two of these express mains, so called, are on Broad Street and there is a third, nearer the Delaware River, at present terminating in the vicinity of Market and Second Streets. During the past season an extension to this latter main has been under construction so that now it has been carried into the South Philadelphia district considerably below Market Street, but at the time of this investigation no water was being served into this district through this pipe line. It is the intention of the Department of Public Works ultimately to carry an individual express main from Lardner's Point down along the river into the southern district to supply this section only, but, as conditions are at present, the southern district is receiving the same kind of water that is served elsewhere throughout the Torresdale distribution area.

The investigation relative to typhoid fever carried on in 1913 by the municipal and State Health Departments left a strong suspicion that the outbreak of that year was due to a pollution of the public water supply, particularly in the Torresdale district, so much so in fact that the main Torresdale district was termed in the reports of this study as "the infected water district." The conclusion reached by the city Department of Public Health and Charities was:

"That the probable cause of at least seventy-two per cent. of the typhoid fever cases in Philadelphia (in 1913) was due to the pollution of the city service mains; and, in the absence of any other known cause of contamination, it is fair to assume that this pollution was caused by the dual piping system in use in certain manufacturing plants."

The investigation had shown that there were a large number of manufacturing plants having in use a dual piping system, one system carrying city water filtered and the other raw polluted river water. As a result of the campaign carried on by the Bureau of Health a large number of such dual connections were severed and it appears that now, according to the information of the bureau, practically all of the dual connections have been discontinued.

The Outbreak of Fever in 1915.

During 1914 there were reported in the city 793 cases of typhoid fever, a marked reduction as compared with the 1,698 cases reported for the year 1913. The records for the year 1915 show that for the first seven months of the year the morbidity for typhoid was considerably lower than for the preceding year, but for the next three months the number of cases increased rapidly, the total being much in excess of the number of cases for the same period of the previous year. This caused the city and State officials considerable anxiety, and a special investigation was undertaken to ascertain the cause of the outbreak. It developed that while there were scattered cases of typhoid fever throughout the entire city, yet by far the greatest number occurred in the South Philadelphia district and principally in a section of this district largely inhabited by foreigners, a fact which directed the attention of the investigators to a careful consideration of this locality with a view of ascertaining whether there might be some special cause for the cases of this particular district. The investigation was finally centered on the outbreak as it occurred in the first, second, third and fourth wards and the northeastern section of the twenty-sixth ward, as in this region the focus of infection seemed to lie.

Before proceeding with the detailed study relative to this limited territory, it may be pertinent to note the facts as to the general prevalence of typhoid fever throughout the entire city, and for the purpose of comparison data are presented in a couple of tables which give in a summarized form the occurrence of typhoid fever from January to October, inclusive, for the years 1913, 1914 and 1915.

Typhoid Fever in Philadelphia 1913, 1914 and 1915 by Months.

	1913	1914	1915
January,	47	41	26
February,	60	52	36
March,	59	36	27
April,	54	51	28
May,	165	59	26
June,	199	72	35
July,	180	82	36
August,	297	117	91
September,	218	113	136
October,	176	79	177
Total for 10 months,	1455	702	618

COMPARATIVE RECORD OF TYPHOID FEVER IN PHILADELPHIA ACCORDING TO DATE OF REPORT TO CITY FOR THE YEARS 1913, 1914 AND 1915, BY MONTHS (JANUARY TO OCTOBER, INCLUSIVE), AND BY WARDS.

Ward.	Jan.			Feb.			March.			April.			May.			June.			July.			Aug.			Sept.			Oct.		
	1913	1914	1915	1913	1914	1915	1913	1914	1915	1913	1914	1915	1913	1914	1915	1913	1914	1915	1913	1914	1915	1913	1914	1915	1913	1914	1915	1913	1914	1915
1,	4	4	----	3	2	----	2	2	----	2	1	----	10	4	1	12	4	----	14	6	1	22	9	6	3	4	4	10	3	11
2,	2	3	4	1	3	1	1	2	----	4	2	3	4	8	----	21	3	5	10	7	----	17	3	6	9	7	27	5	4	30
3,	2	1	----	1	----	1	3	1	----	4	----	2	7	----	----	12	6	1	3	2	3	8	3	5	5	4	8	3	8	13
4,	----	----	1	1	2	----	2	1	1	1	----	----	1	3	1	11	6	4	1	6	2	5	5	1	5	2	4	2	8	10
5,	----	1	1	2	----	1	2	----	----	2	----	----	3	----	----	6	2	----	6	----	----	4	5	4	2	3	1	3	1	3
6,	----	----	----	1	----	----	----	----	----	----	----	----	----	----	----	----	----	----	1	----	----	1	----	----	5	----	----	1	1	1
7,	----	----	1	----	2	1	3	----	----	----	1	1	5	1	1	6	----	----	5	----	2	6	3	4	3	1	1	5	2	2
8,	----	----	----	----	----	1	1	----	----	----	----	----	4	----	----	----	2	----	----	----	----	1	----	1	----	1	1	1	----	----
9,	1	----	----	----	----	----	1	----	----	----	----	----	1	----	----	----	1	----	----	1	----	----	1	----	----	2	----	----	----	1
10,	1	----	----	1	----	3	1	----	----	----	----	----	1	----	1	2	----	----	2	----	----	1	1	1	2	1	1	1	----	1
11,	----	----	----	----	----	----	----	----	----	1	----	----	2	----	----	----	----	----	----	----	----	1	----	1	1	1	----	1	----	1
12,	----	----	----	1	----	----	1	----	----	----	----	----	----	2	----	1	----	----	2	----	----	4	1	2	9	3	1	3	----	----
13,	----	1	----	1	3	2	1	1	----	----	----	----	----	----	----	8	----	----	1	----	----	5	2	2	3	1	2	3	----	3
14,	----	----	----	3	----	----	1	----	1	3	----	1	4	1	----	3	----	----	1	----	----	3	----	2	3	1	----	1	----	----
15,	----	----	----	2	1	----	1	1	1	1	----	2	2	----	1	4	1	1	3	1	----	7	2	1	8	4	1	4	1	3
16,	----	1	----	----	----	----	1	----	----	1	----	----	3	2	----	3	1	----	3	1	1	6	----	2	4	----	----	4	1	----
17,	----	1	----	1	2	----	----	1	----	----	----	----	2	1	----	3	1	----	2	1	1	4	1	----	3	----	----	5	----	----
18,	----	----	1	4	----	1	1	----	1	3	1	----	6	----	----	4	1	----	4	2	----	9	2	1	5	----	2	2	----	2
19,	1	----	1	1	4	2	2	----	1	3	3	----	7	----	1	8	----	----	6	3	----	17	----	----	11	3	1	7	3	1
20,	1	4	1	2	----	1	3	2	2	4	2	2	8	----	----	5	2	1	6	5	----	8	8	2	11	2	----	4	5	2
21,	----	----	----	1	----	1	----	1	----	----	2	----	3	2	----	1	1	1	----	----	----	3	----	----	2	1	3	4	1	4
22,	3	2	----	1	5	----	1	----	2	2	2	----	7	2	----	5	3	1	----	1	4	6	5	4	10	8	4	6	3	5
23,	2	----	----	2	----	----	----	----	----	1	----	----	----	----	----	2	----	----	1	1	----	2	----	4	----	----	3	----	----	1
24,	----	----	1	1	----	2	1	----	1	2	4	----	2	3	2	1	3	2	1	2	1	2	1	----	4	4	1	6	1	4
25,	1	2	2	2	----	6	----	2	2	----	2	1	11	1	----	5	2	----	11	2	----	9	5	1	9	2	3	7	----	1
26,	2	----	5	4	8	----	1	5	4	3	5	----	19	6	3	13	4	2	14	1	1	25	4	4	10	6	5	22	5	17
27,	1	----	----	----	----	----	1	----	1	----	----	1	----	2	1	1	----	1	----	----	----	2	2	1	----	2	2	1	----	----
28,	1	1	----	----	1	----	3	----	----	3	3	----	4	3	----	2	2	----	----	1	1	7	2	1	3	3	2	----	3	4
29,	1	1	----	----	3	1	1	----	----	----	----	1	----	1	----	1	2	----	----	1	2	3	3	2	5	2	1	4	----	1
30,	----	----	----	----	----	----	2	1	----	2	1	----	----	1	2	1	1	----	5	1	2	5	3	2	1	1	8	1	----	2
31,	2	2	1	3	2	1	1	1	----	2	1	1	1	----	----	3	1	1	2	----	----	4	1	2	5	1	----	3	----	----
32,	2	2	----	1	----	----	1	2	1	2	2	1	3	2	----	4	1	----	3	3	----	4	4	----	2	2	3	5	1	----
33,	3	1	----	1	1	1	2	1	----	----	1	----	3	----	2	2	1	----	10	3	1	9	5	1	3	1	3	6	2	----
34,	1	2	1	----	1	2	----	----	1	2	1	1	1	3	----	2	2	1	4	4	2	7	3	1	6	2	4	4	1	5
35,	1	----	----	----	----	2	----	----	1	----	----	----	----	----	----	----	----	----	----	1	----	2	1	1	2	----	----	----	----	----
36,	1	----	1	3	3	1	3	----	----	----	1	----	10	1	1	11	2	2	16	1	3	21	3	4	10	6	7	6	4	3

COMPARATIVE RECORD OF TYPHOID FEVER IN PHILADELPHIA ACCORDING TO DATE OF REPORT TO CITY FOR THE YEARS 1913, 1914 AND 1915, BY MONTHS (JANUARY TO OCTOBER, INCLUSIVE), AND BY WARDS.—Continued.

Ward.	Jan.			Feb.			March.			April.			May.			June.			July.			Aug.			Sept.			Oct.		
	1913	1914	1915	1913	1914	1915	1913	1914	1915	1913	1914	1915	1913	1914	1915	1913	1914	1915	1913	1914	1915	1913	1914	1915	1913	1914	1915	1913	1914	1915
37,											1	1		2		3					1				2		1	2		
38,	2	1		3	1	1		1	2	1	2	1	5	2	1	3	3	2	1	4		3	2	2	1	5	2	2	3	2
39,	5	4	2	1	3	1	4	5		1	2		11	1	1	17	4	1	15	4	1	34	9	4	17	4	4	10	7	7
40,			1	2			2	1			3	1	2	3		3		3	10	4	1	6	5	3	8	6	11	7	3	12
41,		1		1	2			3			1			1						6	1		2		1				2	
42,	1						3		2		2	2	3	1	1	3		1					3	5	1	3	1	4	1	2
43,	4	2		3			3		1	1	3	1	1	1			5	2	2	3		2	3	1	4	4	5	2	1	4
44,			1	2			1		1	1		1			2		1		4		1	3		2	1	1		1	1	12
45,			1	2	1		1	2					3			2	1	1	7			2	2	2	3	1		2	3	
46,		2		2	1	2	1			2	1	3	3		2	2	2		1		1	5	1	3	5	3	6	4		5
47,	2	2				1						1	2			2		2	3	1	1	2			8	3	1	2		
48,*					1						1				1		1			3	2		2			2	2			2
	47	41	26	60	52	36	59	36	27	54	51	28	165	59	26	199	72	35	180	82	33	297	117	91	218	113	136	176	79	177

*Made from a part of the 36th ward, November, 1913.

From the data presented in these tables it appears that in 1915 there was no material increase in the number of typhoid fever cases until August, in fact the morbidity was exceptionally low. Beginning then and continuing through September and October the cases became decidedly more numerous, so much so as to alarm the city and State Health Departments. The outbreak started in the latter part of July and the study relating thereto has been made of the cases occurring in July, August, September and October, a total of four hundred and forty cases. They were scattered quite generally throughout the entire city but the significant feature of the outbreak is found in the fact that one hundred and fifty-eight of the cases, or thirty-six per cent., were localized in a comparatively small area in the southeastern section of the city. In most instances, the cases elsewhere in the city could be ascribed to various causes, but of these hundred and fifty-eight cases only seventy-three, less than half, could be assigned to a definite cause, the remaining eighty-five being of unknown origin.

Naturally, the public water supply would first receive attention as a possible source of infection. Since this section of the city receives the same supply as all other parts of the Torresdale district, it would be supposed that, if the water coming from the Torresdale filter plant were infected, the outbreak would be more or less general throughout the area served with this supply. Such was not the case. The Bureau of Water makes analyses of samples of water collected from various stations throughout the entire district. At the Torresdale plant the daily routine comprises an analysis of three samples of raw water, two of the water applied to the pre-filters, and two of the water from the pre-filters; of one sample from each of the sixty-five slow sand filters and one combined sample of a mixture of water from all of the filters; and of three samples of the water after it has been disinfected with chlorine. At the Lardners Point pumping station nine samples are taken daily, one in the office and eight from the pumps. In the Torresdale district there are sixteen regular sampling stations scattered throughout the district. At nine of these stations samples are collected on alternate days three times a week. These nine are all situated north of Vine Street. Three of the remaining seven are in the center of the city in the business district, and the other four are in South Philadelphia, on or below South Street. These seven samples are collected twice a week on days other than those on which the samples are collected at the uptown stations.

The results of analysis show that B. coli were found in the raw and filtered water at the Torresdale plant at various points throughout the works prior to the time it received the chlorine treatment. This treatment, judging from the analytical results, interposes a barrier between the contaminated water and the consumer. A scrutiny of the results of analysis of samples collected down in the city for the year 1915 up to the first of November indicates that occasional B. coli were discovered, but mostly in portions of ten cubic centimeters. Beginning with July there were only a few occasions on which any such contamination appeared in the samples and, from the figures submitted by the Bureau of Water, the total bacterial count in these samples from September to November, inclusive, was very low.

When the outbreak of typhoid fever became known the Bureau established several special sampling stations in the Torresdale district, but the results of analyses of samples collected at such places were generally negative so far as B. coli were concerned.

The City Bureau of Health also undertook a series of analyses, collecting its samples collected at such places were generally negative so far as B. coli were ized. These were collected at or near sampling stations of the bureau and, generally speaking, they may be considered as corroborative of the other results obtained by the bureau. B. coli were found, however, on several occasions, mostly in portions of ten cubic centimeters.

At the time the State Department of Health made its investigation samples were collected and analyzed in its own laboratories, all of them being taken in the southeastern section of the city, some from the sampling stations of the Bureau of Water and some from new stations, and still others from fire hydrants throughout the district. An effort was made to secure water from dead ends of pipe lines. This procedure, however, was not started until the fifth of November, when the typhoid fever outbreak was on the wane, consequently, the samples cannot be considered as indicative of the water that was in the mains in July, at which time, or a little later on, the contamination must have occurred if the water was at fault. All told forty-two tap samples and twenty-four fire hydrants samples were collected between the fifth and eighth of November. With but one exception the tap samples were negative as to B. coli and all of the fire hydrant samples failed to show any B. coli in one cubic centimeter. The water from the fire hydrants showed in some instances considerable turbidity indicating sediment in the pipes and corroborating findings along this line in the investigation made in 1913.

Moreover, the city has during the past year been engaged in the construction of a new sedimentation basin at the Torresdale filter plant along the bank above the intake. This work started in April, 1915, and was in the course of operation at the time the investigation was made. The dredging being done has caused the turbidity of the raw water to increase very materially, resulting in an extra load being placed on the filters and requiring more frequent washing of the pre-filters. Because of this operation, the State Department of Health advised the city water officials to increase the dose of germicide at the Torresdale plant over

that which is ordinarily used. This was done and the increased dose was still being applied at the time of the investigation. It is expected that most of the work incident to the construction of this sedimentation basin will be completed by the end of 1915.

While the evidence as to contamination of the water supply does not wholly relieve it of suspicion as being the cause of the outbreak of typhoid fever, yet it is not sufficient to lead to the conclusion that the water was at fault; in fact, when all the other circumstances are taken into consideration the water must be excluded with the proviso that there is a dangerous condition existing here because of the insufficient capacity of the filter plant to meet the growing needs of the city, and that, furthermore, the barrier interposed between the contamination in the river and the consumer by the chemical germicide is too slight and is liable to be broken down at any time with the result that a widespread outbreak of a water-borne disease may ensue.

The investigation made by the State Health Department finally centered itself on the typhoid fever cases occurring in a foreign section of the city in the first, second, third and fourth wards, and a part of the twenty-sixth ward. Roughly this territory lies between the Delaware River and Broad Street and extends from South Street south to Mifflin Street. The entire area is included in about one square mile. In 1910, in this area approximately 150,000 persons resided and the population in 1915, no doubt, is in excess of that number. This is distinctly a foreign section of the city and may roughly be divided into three regions marked by the predominating nationality of each. From the Delaware river west to Third street is the Slavish region with the Poles the predominating nationality. Between Third and Seventh streets the Jewish people predominate, and from Seventh street to Broad street it is said that the Italians outnumber any other nationality. Of course, in addition to these three nationalities there are many others represented in this section which takes on a distinctly foreign aspect due to the habits of the people residing here.

The conditions in this section are favorable for the spread of the disease. It is congested, the houses being built in compact rows with poorly lighted and crowded courts or alleys leading off from the main streets. There is serious overcrowding in the houses and, taken as a whole, the housing conditions are bad. In many instances surface drainage exists, the kitchen and laundry water being discharged into the gutters and stagnating in the streets. Generally speaking, the section is supplied with sewers and in comparison with some others parts of the city there are few of the old type of privy vaults. But in connection with the small houses and tenements there are many outside water closets. Such environments naturally lead to insanitary methods of living. The streets are littered with refuse from the houses, some of the foreigners indulging in the practice of wrapping their garbage in paper and throwing it out into the streets, depending on the city street cleaners for its removal. The shopkeepers expose their wares in front of the store without properly protecting them, in many instances placing them on stands or in containers only a few inches above the sidewalks or streets. The traffic in the street and the street cleaning stirs up the dirt and dust with the result that such articles cannot but be contaminated.

Shell-fish are sold in basements and cellars under decidedly insanitary conditions. Such places are dark and poorly ventilated, the shell-fish are not kept iced, and the forks are allowed to lie on the tables with a strong probability that they are very indifferently washed.

In the moving picture houses there is a lack of proper ventilation. The audiences are much crowded and spit freely on the floor.

It is the habit of many of these foreign families, particularly among the Italians, for the entire family to migrate during the vegetable and berry season to New Jersey, where they are employed, living as best they can during this season in old shacks. In many instances cases of disease, particularly typhoid fever, have been traced to infections occurring outside the city, the case developing after the patient returns to the city from a season spent on these berry and vegetable farms. From the conditions existing in the city home it is readily apparent why communicable diseases spread throughout a community such as this. Furthermore, the city health authorities are of the opinion that some of the foreign doctors practicing in these sections fail to report cases of communicable disease or return a different diagnosis. Again, the patients are poor and do not consult a physician until absolutely compelled so to do. They are said to have a morbid fear of doctors and hospitals, all of which aids in hiding the disease.

Generally, it may be said that the dwellings in the sections are unscreened and that flies and other insects have free access to the interior of such buildings and can thus become a very likely medium for the spread of contamination and possibly disease.

In the district thus outlined there are three curb markets, so called. These were established by the city with the idea of reducing the high cost of living in the section.

The market nearest the river is on Fourth Street and extends from South Street for two blocks to Fitzwater Street and on Fourth Street from Christian Street to Carpenter Street, a distance of one block. This market is patronized chiefly by the Jews and Poles. The next market west is on Seventh Street and extends south from Reed Street for two blocks to Tasker Street and is patronized largely by Jews

and Italians. The other market, and possibly the largest of the three, is known as the Christian Street or Ninth Street market and is distinctly an Italian market. It extends on Christian Street for one block between Eighth and Ninth Streets and south on Ninth Street for three blocks to Ellsworth Street.

In general characteristics these markets are similar. The shopkeepers along the market place their wares on stands and in other containers out on the pavements in front of the stores. Produce is also exposed for sale in hand push-carts stationed along the curb and still other venders place their goods in baskets on the pavements and in the streets. In some instances vegetables were found lying directly on the pavements without any protection whatsoever. In addition to the food products, certain sections of the markets are devoted to the sale of dry goods and wearing apparel and such articles are in many instances placed directly on the pavements. The wagons of the street cleaners and the garbage carts are in and out through the market driving directly alongside the push-carts and other containers for food products which are not protected against contamination from such sources. On Ninth Street the trolley cars pass through the market and stir up the dust and dirt in the streets, which increases the possibility of contamination. In addition also there is the customary street traffic.

The food products exposed for sale under such conditions comprise doughnuts, cakes and various pastries and other bakery products, groceries, fish, all kinds of vegetables, poultry (both live and cleaned), eggs, cheese, candy, meat and various other articles.

These markets are conducted nearly every day during the week, except Sunday. In addition, vegetables are trucked through the neighborhood in push-carts. Quite often one dealer owns many of these carts and rents them out by the day to venders who obtain this supply of vegetables at a convenient place, and, unquestionably, at the lowest rate, and then peddle them through the district from house to house. It is reported that most of the produce handled in these curb markets is secured along the Delaware River wharves and thus comes from many different sources. It is safe to assume that the majority of such produce is cheap and of an inferior type. In some instances decayed fruit is offered for sale.

Conditions such as those described above undoubtedly aid in the spread of disease and quite naturally one expects the morbidity rate to be higher in this section of the city than in others where better sanitary conditions prevail. A study of the records kept by the city shows that this is the case. Curves marking the distribution of typhoid fever in the city present a picture of a high morbidity rate in the wards now under discussion. In the absence of some general contributing cause, such as water, that might affect the entire city, the reason must be sought in local conditions.

While the sanitary conditions are similar throughout the entire district, yet the typhoid outbreak of the fall of 1915 seemed to be more or less centralized in the vicinity of the Ninth Street market. Here occurred many cases of fever of which the origin could not definitely be determined. A spot map of the cases showed a cluster of them in the immediate vicinity of this market while the other cases in the wards under discussion are more or less scattered. This then would lead to the conclusion that there was some special cause obtaining in or near this market that did not exist at the other markets, and a reasonable solution of the problem is obtained when the cases occurring from July to October, inclusive, in this district are carefully scrutinized.

During this period in the first, second, third and fourth wards and a part of the twenty-sixth there were in all a hundred and fifty-eight cases of typhoid fever. For seventy-three of this number an origin was reasonably determinable, but for the remaining eighty-five cases no clear cause was evident. The location of the cases in the various wards is shown in the following table:

SUMMARY OF CASES IN THE DISTRICT JULY TO OCTOBER, 1915 (Inclusive).

Ward.	Cases.	Origin.	
		Determined.	Unknown.
4.	16	5	11
3.	29	18	11
2.	63	36	27
1.	20	6	14
26.	30	8	22
Total,	158	73	85

With the seventy-three cases of determined origin this detailed study will not particularly concern itself, as they arose from various sources, for the most part be-

ing infected outside of the city or coming definitely in contact with other cases. In one or two instances the infection of the patient is charged to bathing in sewage polluted water, and for several cases there is a history of probable infection through a local milk supply.

A study of the various nationalities of the eighty-five undetermined cases is illuminating. The following table has been prepared from the reports of the cases as received by the Bureau of Health and recorded at the City Hall.

NATIONALITY OF CASES OF UNDETERMINED ORIGIN.

Nationality.	Ward.					Total.
	4	3	2	1	26	
American,	2	4	4	4	7	21
Italian,	7	7	22	5	13	54
Hebrew,	2			2		4
Polish,			1	2		3
Russian,				1		1
Unknown,					2	2
Total,	11	11	27	14	22	85

It appears from this tabulation that the Italians far outnumber any other nationality, there being fifty-four Italians out of the entire eighty-five cases. Next in frequency are the Americans, the number recorded for this nationality being twenty-one. A careful scrutiny of the city record reveals once more the difficulty of estimating the influence of nationality when the term "American" is used to describe a person born in the United States, a difficulty too little considered in the discussion of epidemics in regions largely populated by foreigners. Of the twenty-one "Americans" in the table sixteen have names indicative of foreign parentage and suggesting habits of life peculiar to foreigners. Of these sixteen, eleven are evidently of Italian parentage and seven of them are children from four to eleven years of age. As we have no statement of the time spent by the other Italians in this country, it may be quite proper to count these eleven "Americans" among the "Italians" in order to estimate the bearing of national habits on the spread or development of disease. Of the two recorded as "unknown," one is a person of twenty-six with a distinctively Italian name, the other being nineteen with a foreign name. From the point of view of domestic habits we may say then that of the eighty-five cases under consideration at least sixty-six were Italians by birth or environment, of whom eight lived in the fourth ward, nine in the third ward, twenty-four in the second ward, six in the first ward, and nineteen in the twenty-sixth ward.

It is also interesting to consider these cases as to age and sex, as shown in the following table:

AGE AND SEX OF CASES OF UNDETERMINED ORIGIN BY WARDS.

Age Periods.	4			3			2			1			26			Total.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
0- 4,	0	0	0	0	0	0	0	1	1	0	0	0	1	0	1	1	1	2
5- 9,	1	1	2	1	0	1	0	0	0	1	2	3	3	3	6	6	6	12
10-14,	3	1	4	0	0	0	1	0	1	2	1	3	1	0	1	7	2	9
15-19,	1	0	1	1	1	2	7	2	9	1	1	2	5	1	6	15	5	20
20-24,	0	0	0	2	1	3	7	0	7	2	1	3	3	1	4	14	3	17
25-29,	2	0	2	2	0	2	5	0	5	2	1	3	3	0	3	14	1	15
30-34,	2	0	2	1	1	2	3	0	3	0	0	0	1	0	1	7	1	8
35-39,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
40-44,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
45-49,	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	1
50+,	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	1
Total,	9	2	11	8	3	11	23	4	27	8	6	14	17	5	22	65	20	85

Thus it appears that only two of the cases were infants, while twenty-one fall into the age period from five to fourteen years, and sixty may be considered as grown-ups ranging in age from fifteen to thirty-four years. The other two are above forty-five years of age. All but ten of the grown-ups are males.

Looked at from a standpoint of occupations it appears that thirty of the eighty-five cases may be classed as stay-at-homes, this including the school children, those engaged in housework, and the others residing at home either because of their infancy or for some other reason. This then leaves fifty-five with some employment, and a study of the facts indicates that they had nine different vocations. The largest number in any class were twenty-two laborers, the next largest number in any class being twelve factory hands. These facts are set forth in a summarized manner in the following table:

OCCUPATIONS OF CASES OF UNDETERMINED ORIGIN.

Occupation.	Ward.					Total.
	4	3	2	1	26	
Housewife,		1		1	1	3
Housework,		1	1		1	3
At home,	2		1	2		5
School,	4	1	2	4	8	19
Total stay-at-homes,	6	3	4	7	10	30
Laborer,	4	5	8	4	1	22
Factory,		1	9	2	4	16
Tailor,	1	1	3		3	8
Clerk,		1		1	1	3
Driver,			2			2
Restaurant,			1			1
Miscellaneous,					3	3
Total, not stay-at-homes,	5	8	23	7	12	55
Grand total,	11	11	27	14	22	85

According to onsets the first of the eighty-five cases was in the fourth ward and took sick on the 6th of July, there being no other cases until the 13th, when an additional one came down. Between the 13th and 27th of July there were six more cases, making a total of eight for the month. In August, September and October there were twenty-two, twenty-nine and twenty-six cases, respectively, the last one occurring on October 20th. In August the cases kept occurring one or two at a time until the 22nd, after which time and during the entire month of September and to the close of the outbreak in October, the cases occurred more frequently but in a rather strung-out fashion, indicating that the infection was being caused by some continuing source rather than by one single source; in other words, the outbreak was not explosive in character. A table showing the onsets of the eighty-five cases is here given.

Table Showing Dates of Onset of Cases of Undetermined Origin.

July 6,	1	August 25,	1	September 26,	1
July 13,	1	August 26,	1	September 28,	1
July 16,	1	August 27,	2	September 30,	3—29
July 17,	1	August 29,	1	October 1,	2
July 24,	1	August 31,	1—22	October 2,	1
July 25,	1	September 2,	1	October 3,	1
July 26,	1	September 4,	1	October 4,	1
July 27,	1— 8	September 6,	1	October 5,	2
August 1,	2	September 7,	1	October 7,	2
August 4,	1	September 8,	1	October 10,	1
August 8,	2	September 10,	2	October 12,	4
August 12,	1	September 12,	5	October 13,	1
August 13,	1	September 16,	1	October 14,	2
August 14,	1	September 18,	1	October 15,	2
August 15,	1	September 20,	5	October 16,	2
August 18,	1	September 21,	2	October 17,	3
August 22,	1	September 22,	1	October 18,	1
August 23,	2	September 23,	1	October 20,	1—26
August 24,	3	September 25,	1		

A careful study of the milk used by these patients was made, and the supplies were found to be so varied in each of the wards that on this basis milk may be excluded as being the cause of the outbreak. For instance, in the second ward out of a total of sixty-three cases of known and unknown origin there were fourteen different milk supplies, furnished from one to five of the cases, and in one instance furnishing thirty of the cases, this being a dealer whose routes cover a large section of the southern part of the city, supplying milk to thousands of persons. About the same proportion will hold with regard to the other wards in the district. Of the eighty-five cases of unknown origin thirty-three within a month prior to their illness used raw shell-fish, but these were procured from many different sources,

Raw fruit and vegetables were used by sixty-one of the eighty-five patients, and by far the larger number of these obtained these food products either from the curb markets or from the push-cart venders, which is in itself a significant fact and very definitely directs attention to the use of fruits and vegetables in these communities, and the conditions under which they were obtained.

With similar conditions existing at all of the markets, it would be natural to suppose that the outbreak would appear with equal force in the vicinity of each one, assuming that the markets were responsible. It turns out, however, that in the territory immediately surrounding the markets that sold chiefly to the Hebrews there were only seventeen cases of typhoid, while in the practically similar area around the market situated in the Italian quarter sixty-one cases of typhoid fever were found. This apparent difference is thought to be due to the different methods by which the foodstuffs are handled by these two races. It is said that the Hebrew is in the habit of cooking most of his foodstuffs, while the Italian is more of a vegetarian and is accustomed to eating much fruit and many vegetables without cooking. In all of the markets the universal practice is that the prospective purchaser handles the footstuffs. As the facts thus pointed strongly to the probability that infection had been spread by the handling of the green goods, vegetables were purchased at the Ninth Street curb market and examined at the laboratories of the Department. Raw oysters and clams were also procured from one of the oyster cellars in the neighborhood of the Ninth Street market and examined at the laboratories. The peppers, fennel and lettuce were obtained from push-carts; the dandelions were bought from a basket setting in the street, but the celery purchased had been lying on the pavement. The oysters were taken from a trough and had a small piece of ice over them, but the clams were bought direct from the bag and had not been iced. Both the oysters and the clams were in the shell. The report of the laboratories on the examination of these articles follows:

Peppers	5
Lettuce	1 head
Fennel	4 heads
Dandelion	1 bunch
Celery	4 bunches
Oysters	4
Clams	4

All of each kind of vegetable were washed in one hundred cubic centimeters of sterile water, and one cubic centimeter of this water was plated in one plate of lactose-litmus agar and in one plate of plain agar.

The totals of all kinds of bacterial colonies and of colonies of bacillus coli in one cubic centimeter of the hundred cubic centimeters of wash water from each kind of vegetables were as follows:

	Total all kinds.	B. Coli.
Peppers	35,000	600
Lettuce	90,000	48
Fennel	48,000	0
Dandelion	14,000	0
Celery	50,000	23,000

An examination for other members of the typhoid-colon group of intestinal bacteria was made with all the vegetables, but none were found except on the celery, and here B. typhosus was isolated in pure culture from colonies on Endo's Medium.

In examining the oysters and clams, the clams and oysters were washed in their shells in eight hundred cubic centimeters of sterile water. One cubic centimeter of this wash water was plated on lactose-litmus agar to determine the number of pink colonies or acid producers. Three thousand pink colonies were found, none of which answered the test for B. coli.

One cubic centimeter of the juice of each oyster and clam was plated on lactose-litmus agar to determine the number of colon bacilli colonies to the cubic centimeter. Pink colonies in oyster juice varied from 100 to 1,800; in clam juice, 2,400 to 10,800. Twenty B. coli were found in the oyster juice of one oyster and two B. coli in the clam juice of one clam. The others were free of B. coli.

Juice from the interior of the oysters and of the clams was planted in lactose-bile medium and plated on Endo in an attempt to isolate other members of the typhoid-colon group. None were found.

The isolation of the bacillus typhosus in the bacteriological examination of the celery is the third time the Department laboratories have found the organism in foodstuffs or water, a not common accomplishment.

The announcement of the Commissioner of Health through the Philadelphia newspapers on November 12, 1915, of his findings and conclusions respecting the matter was as follows:

"The unexplained prevalence of an exceptional amount of typhoid fever in the first, second, third, fourth and twenty-sixth wards during the past four months has been made the subject of investigation by the State Department of Health, in co-operation with the City Bureau of Health.

"One hundred and forty-eight cases have been reported in this section of South Philadelphia since the first of July. In more than half of these, investigation failed to determine the cause.

"The investigation disclosed the fact that the majority of all these cases were clustered in and about three public markets, the South Street market, the Seventh Street market and the Christian Street market. These are all curb markets. Fruits, vegetables, pastry, clothing and miscellaneous merchandise of every description are dumped on push-carts and pavements without regard for any sanitary precautions. The patrons of these markets handle and pick over the exposed foodstuffs, thus giving every opportunity for the transmission of disease.

"Beginning with a few cases early in the summer, there was a steady increase up to the latter part of October. The greatest number of cases occurred in the immediate vicinity of the Christian Street market. This market is largely patronized by the inhabitants of the section known as "Little Italy." The patrons of the South Street market are principally Hebrews, while the Seventh Street market is patronized in the main by Hebrews and Poles.

"While the congestion of population is almost equally great throughout this entire section, and the conditions under which the markets are carried on are practically the same, the State Health authorities were for a time at a loss to account for the exceptional number of cases in the vicinity of the Christian Street market.

"After a thorough investigation, however, Dr. Samuel G. Dixon, Commissioner of Health, announces the following conclusion:

"Our inspectors have found that the different methods used by the Italians and Hebrews in the preparation of their food are responsible for the larger number of cases being found in the vicinity of the Christian Street market in Little Italy. It is the custom of the Italians to eat many of the fruits and vegetables raw, while the Hebrews cook the greater portion of their food. It is presumably due to this custom that the members of the Italian colony have suffered to a greater extent than the other residents of the district."

The pictures reproduced in this report give a fair idea of the character of the markets and the manner in which they are conducted.

An occurrence such as this gives rise to a doubt as to the economy resulting from handling footstuffs in such a manner. The markets were established by the city to enable dwellers in the vicinity to secure foodstuffs at a lower rate than is possible when bought from a dealer permanently in business about whom many restrictions are thrown in an effort to guard the commodities that he handles. Apparently few, if any, restrictions have been placed on the venders frequenting these markets. Possibly nine-tenths of all the typhoid cases in this section were removed to the hospitals, and to this action, no doubt, is due the fact that the epidemic was not more widespread. But the question arises as to whether the loss sustained by the community in one outbreak of typhoid such as this does not more than offset the possible benefit derived by the individual householder through the lower prices at which the curb market men are able to sell their produce.

While the investigation was going on officials of the Water Bureau made a verbal request to the Department's representative to be permitted to reduce the amount of chemical disinfectant being applied to the public water supply at the various filter plants, on the ground that the danger of an outbreak of water borne disease seemingly had passed and the funds supplied for this purpose were nearly exhausted. Pertaining to this request a letter was addressed to the Chief of the Water Bureau by the Commissioner of Health on November 17, 1915, in which the attention of the water department was also called to the necessity of sterilizing new mains before the water was allowed to be served to the public through them. The letter was as follows:

"November 17, 1915.

"Mr. Carlton E. Davis, Chief, Bureau of Water, City Hall, Philadelphia, Pa.

"Dear Sir: Relative to your verbal request that because of a shortage in your present appropriation, the amount of chemical disinfectant applied to the public water supply at the various filter plants be reduced to the amount which you were applying during the spring and summer months, I wish to say that if the result of the bacteriological examination of samples of your filtered water indicates that such reduction can safely be made, this Department will interpose no objections

excepting in the case of the Torresdale plant. At this latter point I believe that the amount of chemical germicide must be continued at a maximum until construction work on the sedimentation basins is completed. The stirring up of the river mud in the vicinity of your intake causes turbidity in the water, which places an additional burden on your filters and increases the danger of polluted water passing into your distributing system. The results of your laboratory examinations indicate the necessity of adding the germicide at the present high rate at this plant. I am sure that the city authorities will not care to take the responsibility of not providing the funds necessary for the purchase of those chemicals when they thoroughly understand the necessity for their use.

"Also, I wish to call your attention to the danger incident to the use of water from new extensions of your distributing system where the pipes have been lying in the streets or in your storage yards for some time before being incorporated into the pipe lines. I understand that before allowing service taps to new lines you flush the piping and endeavor to disinfect the water by the use of hypochlorite of lime powder. I believe that the city should purchase apparatus which will permit adequate disinfection of each new pipe line and that your Bureau should insist upon the use of this apparatus prior to placing such lines in service.

"Very truly yours,

"SAMUEL G. DIXON."

That the efforts of the State Health Department along this line met with success is evidenced by the reply to this communication received on November 18, 1915, a copy of which follows:

"November 18, 1915.

"Dr. Samuel G. Dixon, Commissioner of Health, Harrisburg, Pa.

"Dear Sir: I beg to acknowledge receipt of your letter of the 17th with reference to the use of chemical disinfectant. Your instructions regarding this matter will be followed by the Bureau of Water. The Bureau of Water fully agrees with your conclusion, and under the present conditions, particular and unusual attention shall be paid to the output of the Torresdale plant.

"Within the past few days the Bureau has awarded a contract to the Electro Bleach Company for furnishing a portable chlorine plant suitable for applying disinfectant in the pipes under pressure. We believe this will be useful in sterilizing new mains and may be more serviceable than our present use of the hypochlorite of lime powder. The use of hypochlorite of lime powder is our present standard and is being used continuously on new work.

"In connection with the new mains laid for the improvement of the water supply of South Philadelphia, we have had opportunity to flush out a number of dead ends by opening these ends so that they could discharge freely. We have succeeded in thus removing a very large amount of sediment.

"We are now engaged in a study to determine whether with available funds for the improvement of the water supply of South Philadelphia we can eliminate still more of these dead ends and incidentally provide for a thorough flushing of a larger area. It is the belief of the Bureau that in effect the whole of the pipe system in South Philadelphia is a dead end and that such has been the condition for many years, including the ante-filtration period.

"It seems impossible to flush the pipes through hydrants in a manner to remove the sediment which has thus collected in this territory for the past many years. We propose to exert every effort to open pipes at as many points as possible where flushing into the sewers can be systematically carried out. Doubtless this will result in a more pleasong condition of the water supply, though whether it will have any direct bearing upon the sanitary quality of the water may be open to question. Presumably any sediment now in the pipes must be free from pathogenic germs.

"Very truly yours,

"C. E. DAVIS,

"Chief of Bureau."

It is pertinent to note that the method of handling foodstuffs in these curb markets is contrary to a regulation adopted by the Advisory Board of the Department of Health at Harrisburg on the 14th day of January, 1915. As described above, the articles for sale are exposed and are not properly screened, and in a number of instances are placed directly on the sidewalk or pavement. The rule referred to is this:

"No firm, person or corporation shall expose for sale on any sidewalk or pavement or other exposed place any fruit, vegetables or other articles of food which are eaten uncooked, unless such fruit, vegetables or other articles of food are thoroughly screened and protected from flies, and unless they are on elevated stands at least twenty-four inches above the level of the sidewalk or pavement."

TYPHOID FEVER IN PITTSTON AND VICINITY.

Pittston City is in the northeastern part of Luzerne County on the east bank of the North Branch of the Susquehanna River just below the mouth of the Lackawanna River. It is in the anthracite coal fields about midway between Scranton and Wilkes-Barre. The 1910 census gave the city a population of 16,267. There are manufactories, but these are of secondary importance in comparison with the coal mining. Yatesville is a borough a quarter of a mile southeast of the city and had a population of 573 in 1910. Between it and Pittston is the small village of Browntown in Pittston Township.

The public water supply in Pittston is furnished by the Spring Brook Water Supply Company, operating and controlling a large number of water companies supplying the Wyoming Valley 8 miles above and 19 miles below Pittston.

The normal supply for Pittston City and several nearby communities having a combined population in excess of 100,000 is obtained from a stream known as Spring Brook and two tributaries thereof known as Trout and Mountain Brooks. The combined areas of the watersheds above the intakes are about 60 square miles of sparsely populated territory. Auxiliary to the Spring Brook supply is that from Little Mill Creek, otherwise known as McAlpine Creek, and the West Pittston pumping station on the bank of the Susquehanna River. The drainage area of Little Mill Creek above the intake is about three square miles, upon which are a few occupied properties. The supply from the Susquehanna River had not been used for several months prior to the outbreak of typhoid fever. Browntown is furnished with water from the Falling Springs supply of the Spring Brook Water Supply Company. Above the intake is an area of about two and one-half square miles on which there are a few occupied estates. The borough of Yatesville is also furnished water by the Spring Brook Water Supply Company from the above sources. All of the supplies mentioned above are disinfected with chlorinated lime before being furnished to the public.

Pittston and vicinity are drained by small tributaries of the Susquehanna River. Sewage is discharged into the river at Pittston. In Yatesville and Browntown there is no public sewerage and earth privy vaults are in use.

TYPHOID FEVER.

In recent years prior to 1915 but few cases of typhoid fever have been reported to the State Department of Health by Pittston. For the current year 32 cases were reported up to the end of November. Twenty-seven cases with onsets from July 10th to August 14th, distributed geographically as follows, were censused by officers of the Engineering Division:

Location.	
Pittston	19
Yatesville	6
Browntown	2

A tabulation of data secured by the census of the cases follows:

Onsets.					
July 10	1	Aug. 2	1		
" 13	1	" 3	2		
" 19	1	" 7	6		
" 23	1	" 8	2		
" 25	1	" 9	1		
" 26	1	" 10	2		
" 27	1	" 11	1		
" 28	1	" 13	1		
Aug. 1	1	" 14	2		
		Total	27		

Age and Sex.

	Male.	Female.	Total.
5- 9	1	3	4
10-14	5	2	7
15-19	1	2	3
20-24	0	2	2
25-29	2	4	6
30-34	0	1	1
35-39	1	1	2
40-44	0	0	0
45-49	0	0	0
50+	0	2	2
	10	17	27

Occupations.	Male.	Female.
Home	20	6	14
Factory	1	0	1
Domestic	1	0	1
Bartender	1	1	0
Engineer	1	1	0
Clerk	2	1	1
Bridge Builder	1	1	0
Total	27	10	17

Water.

Spring Brook Water Supply Company only	20
Spring Brook Water Supply Company and water at Delaware Water Gap	1
Springs at Harvey's Lake	2
Faircloth well, Yatesville	1
Schooley well, Yatesville	1
Thomas well, Yatesville	1
Naple Spring, Yatesville	1
Total	27

Milk.

Lloyd only	23
Lloyd and Ross	1
Lloyd and Spring Brook Dairy	1
Condensed	2
Total	27

Ice.

None	14
Consumers Ice Company	8
Gray Ice Company	5
Total	27

Ice Cream.

None	18
Various	3
Brown	2
Hogan	1
Hogan & Brown	1
Tinker	1
Queeney	1
Total	27

Raw Shell-fish.

None	27

Uncooked Fruits and Vegetables.

None	15
Own Garden	9
Various	3
Total	27

On August 24th samples were collected of the public water supply furnished by the Spring Brook Water Supply Company and of water from certain private wells which had been used by typhoid fever patients. These were examined by the Department laboratories and the results are as follows:

	Bacteria per c. c.	B. Coli per c. c.
Tap sample 251 S. Main St., Pittston	23	0
Tap sample 116 Market St., Pittston	8	0
Tap sample 16 Tompkins St., Pittston	48	0
Tap sample 28 N. Main St., Pittston	27	0
Tap sample 60 S. Main St., Pittston	22	0
Tap sample 34 Stout St., Yatesville	14	0
Dug well L. D. Schooley, Yatesville	2,160	152
Dug well Geo. Faircloth, Yatesville	720	64
Dug well W. S. Thomas, Yatesville	1,420	240

The outbreak of typhoid fever in Pittston was not accompanied by a corresponding prevalence of the disease in the rest of the very extensive territory furnished the same water by the Spring Brook Water Supply Company. This fact practically excluded the public water supply as not responsible for the typhoid fever infection. The foregoing results of analyses do not indicate that it was polluted at the time it was collected, although of course this was after the period when the infection was spread. The polluted private supplies may have been responsible for a few cases, but were not used by enough of the cases to be considered responsible for the majority.

The milk supply furnished by John Lloyd is indicated as the most important factor in the typhoid fever infection. Lloyd lives on the outskirts of Yatesville Borough. At the probable time of the typhoid fever infection in Pittston and vicinity Lloyd was obtaining daily 200 quarts from his own cows, 20 to 40 quarts (the entire output) from Herman Smerdon of Yatesville, and 16 to 20 quarts from Charles Daly of Exeter Township, this being about ten per cent. of his output. At times 20 to 30 quarts daily were obtained from John Lingo in Pittston. Occasionally Lloyd sold a few quarts to Daly. None of the cases had used Daly's or Lingo's milk.

Lloyd's customers were distributed as follows: 300 in Pittston, 18 in Browntown and 14 in Yatesville. With the exception of about 15 families, each receiving an average of one quart daily in bottles, the supply was distributed by dipping from cans in the wagon. No case occurred among the families receiving bottled milk. A careful investigation was made of supplies furnished Lloyd by other dealers without anything pertinent being learned.

The Lloyd household comprise Mr. and Mrs. Lloyd, three children and a hired man. The family has resided there for sixteen years and the farm hand has been employed for five years. Also a boy had been employed for about one year to assist in delivering milk. The other visitors were a daughter, her husband and two children, who visited there for a day or so each month but did not assist at any time in the handling of the milk. As far as could be ascertained there is no history of typhoid fever among this family or the employes. Specimens of blood secured from the Lloyd and Smeridon families and the employes and examined in the Department's laboratories gave negative Widal results.

At the Lloyd farm there are two dug wells, one located near the house and the other adjacent to the barn. The latter is visibly subject to pollution by drainage from the barn. Prior to the Department's investigation the Pittson board of health had samples of water from these supplies analyzed locally and the results in each case indicated sewage pollution. As a result of these analyses Mr. Lloyd proceeded to clean and disinfect the well near the house. The sample of water collected from the well near the barn and analyzed in the Department's laboratories showed a total count of 900 bacteria per c. c. and 152 B. coli per c. c. It was denied that the well near the barn was used except to water stock. Sanitary conditions at the cow stable were bad.

The cases in Pittston largely occurred in the southern part of the city where the bulk of Lloyd's customers resided. None of the cases could logically be attributed to secondary infection.

Although no history of typhoid fever could be discovered at the Lloyd farm or at any of the farms from which he obtained additional supplies of milk or relative to any of those who handled the milk, nevertheless the general insanitary conditions in connection with this dairy and the very general use of it among the typhoid fever patients justified the conclusion that this milk was an important factor in the outbreak of typhoid fever.

Remedial Measures.

At the Lloyd farm instructions were given to put the cow stable in a sanitary condition; to abandon the well adjacent to the stable; after disinfection, to protect the house well from surface drainage and to install a tight cover over it. The Pittston board of health had stopped the sale of this milk in the city on August 14th, because of the prevalence of typhoid fever among those using it, and this board refused to allow the sale of the milk to be resumed until satisfactory changes had been made.

The owners of the private water supplies which the results of examinations by the Department laboratories showed to be polluted were notified of the danger of using these waters and that the sources should be abandoned unless the cause of pollution could be ascertained and removed.

POTTSVILLE, ST. CLAIR AND PORT CARBON TYPHOID FEVER.

The City of Pottsville, the county seat, is located at the junction of Norwegian Creek and the Schuylkill River in the central part of Schuylkill County. The population is estimated to be 22,000. The city covers an area of 3.57 square miles about one-half of which is closely built up. It is bounded on the north by Norwegian Township, on the east by East Norwegian Township and the boroughs of Port Carbon and Palo Alto and the village of Mechanicsville, on the south by the borough of Mount Carbon and North Manheim Township, and on the west by Branch and Norwegian Townships. St. Clair borough is situated about one mile north of Pottsville. The estimated population of St. Clair is 7,000 and of Port Carbon 3,000.

In addition to the mining and shipping of coal the principal industries of this district include iron and steel works, stove works, breweries, meat packing house and textile mills.

Pottsville has a combined system of sewers serving most of the built-up section of the city and discharging into Norwegian Creek and the Schuylkill River. In Port Carbon there are several private sewers and some municipal combined sewers discharging into Mill Creek and the Schuylkill River. Many privies and cesspools are also in use. St. Clair has two public sewer outlets into Mill Creek, both being combined sewers to which connections from probably 200 or more houses are in use. There are also many private sewers discharging into Mill Creek and Little Wolf Creek. A large number of privies and a few cesspools are also in use.

These municipalities have all received permits or decrees relative to sewerage from this Department.

This company obtains its supply from the following surface streams in Schuylkill County; the Eizenhuth Run, Kauffman Run, Wild Cat Run, Tar Run, Shingle Hollow Run, Stoney Creek, Wolf Creek, and for emergency use, Indian Run. The supply from Indian Run has not been used since 1911. With the exception of one property above the Eisenhuth reservoir occupied by a caretaker in the employ of the water company, the drainage areas of these streams are uninhabited.

TYPHOID FEVER.

The Department's records of typhoid fever morbidity in Pottsville, Port Carbon and St. Clair are as follows:

	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915
Pottsville,	33	38	66	60	41	41	20	5	17	14
Port Carbon,	13	13	12	23	2	3	2	4	2	15
St. Clair,	1	2	11	1	2	2	2	3	2	5
Total,	34	53	89	84	45	46	24	12	21	34

The distribution of cases by months for the year 1915 was as follows:

	Jan.	Feb.	March.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Year.
Pottsville,		2	2				2	4	2		1	1	14
Port Carbon,							14			1			15
St. Clair,							4	1					5
Total,		2	2				20	5	2	1	1	1	34

During the investigation 24 cases were censused, 3 being in Pottsville, 5 in St. Clair, 13 in Port Carbon, 2 in Mechanicsville, and one in Norwegian Township. The census data relative to these cases are the basis of the following tables:

Date of Onset		Number of Cases
June	1	1
	7	1
	16	1
	20	1
	21	1
	24	2
	27	1
	28	3
	30	1
July	3	2
	4	1
	5	1
	7	3
	8	1
	9	1
	10	1
	11	1
	12	1
Total		24

Age Period.	Number of Cases.			Age Period.	Number of Cases.		
	Male.	Female.	Total.		Male.	Female.	Total.
0-4,	1	1	2	35-39,	1	3	4
5-9,	0	1	1	40-44,	0	0	0
10-14,	1	0	1	45-49,	1	0	1
15-19,	2	2	4	50-+,	0	3	3
20-24,	1	1	2				
25-29,	3	1	4				
30-34,	0	2	2	Total,	10	14	24

Occupation.	Number of Cases.		
	Male.	Female.	Total.
At home (adults),	0	9	9
At home (children),	1	2	3
At home (vacation),	1	1	2
Miners,	3	0	3
Factory hands,	0	2	2
Cigar maker,	1	0	1
Clerk,	1	0	1
Engineer,	1	0	1
Foundry hand,	1	0	1
Veterinary surgeon,	1	0	1
Total,	10	14	24

Water Supply.	No. of Cases.
Pottsville Water Company	19
Pottsville Water Company and various foreign supplies	2
Pottsville Water Company and Wintersteen well	1
Pottsville Water Company and Little well	1
Moll and Dengler wells and various foreign supplies	1
Total	24

Ice Supply.	No. of Cases.
None	13
Stevens	7
Haas	3
Ferrebee	1
Total	24

Ice Cream Supply.	No. of Cases.
None	11
Wertley	6
Croll	2
Burden	2
Wellner	1
Hefner & Spanhuth	1
Various	1
Total	24

Source of Milk Supply.	No. of Cases.
Morgan	6
Morgan and Wagner	2
Morgan and Kunkel	2
Morgan and Weiss	1
Morgan and Moll	1
Moll	2
Moll and Wagner	1
Weiss (possibly Morgan milk)	1
Rhoads, Klinet and various	1
Mortz	1
Stoudt	1
Rhoads	1
Gibson	1
Condensed	1
Condensed, Winters and Brockhoff	2
Total	24

Eight of the cases had not used uncooked vegetables or fruits, 6 obtained supplies from their own gardens, and the remaining 10 cases had used various supplies. Only one of the cases had used shell-fish.

It appeared that probably 2 of the cases were imported and 3 may have been secondary. In 5 houses there were 2 cases each, and the remaining 14 cases occurred singly.

The public water in Pottsville, St. Clair, Port Carbon and Mechanicsville is furnished from the same sources of supply by the Pottsville Water Company and universally used throughout the district. If this water supply had been the transmissive agent responsible for the outbreak of typhoid fever it would be expected that the cases would be well distributed in proportion to population. However, this was not the case, as Pottsville, with over seven times the population of Port Carbon, had only 8 cases reported for the months of July, August and September, 1915, while in Port Carbon there were 14 cases in the month of July alone. During the latter part of July, 8 samples of water were obtained from the public supply in St. Clair and Port Carbon and analyzed at the Department laboratories. The results of analysis indicated the absence of B. coli in each sample and the maximal total bacterial count per cubic centimeter in any sample was 22. In view of these facts, it appeared logical to exclude the public water supply as not responsible for the outbreak.

One of the wells used by a case was located a short distance from a cesspool receiving the discharges from two other cases having onsets 16 days previous. Samples of this water were secured and the results of analysis from the Department laboratories indicated sewage pollution. The owner of the well was notified of the danger of using this water and instructed to abandon the supply.

It will be noted by referring to the tabulation of milk supplies used that 16 of the 24 cases censused may have used milk supplied by Morgan or Moll. These dairymen lived on adjacent properties and exchanged supplies, so that the milk retailed by them may be considered as one supply. Moll had been engaged in the business for some time and Morgan started the sale of milk about the first of May, 1915. Moll obtained his supply from three of his own cows and from three farms in Berks County. Morgan obtained his supply from two farms in Berks County, one of these having supplied Moll just previously. A careful investigation was made of conditions at the sources of supply and it was learned that at two of the five farms in Berks County from which the supplies were obtained 4 cases of typhoid fever had previously occurred, the most recent reported in 1909. Blood specimens were obtained from these 4 individuals by a Department physician and analyzed at the Department laboratories. The results of Widal tests were negative. The results of analysis of samples of water from three of the supplies from these dairy farms showed the presence of B. coli. The owners of the water supplies were notified of the danger attending the use of these supplies and were instructed accordingly.

Mrs. Morgan, wife of the dairyman, became ill with typhoid fever. She first visited a physician on July 5, when he established the diagnosis of typhoid fever. She was removed to the Pottsville Hospital on July 8th. The physician estimated that the first clinical evidence of the disease occurred about June 21. Mrs. Morgan came to Pottsville from Plymouth about June 1st, remaining three or four days, then returned to Plymouth, coming back to Pottsville on June 15th. This would indicate a possibility of this case being imported. It appears that Mrs. Morgan probably did considerable work in the handling of milk at home. Presuming that she may have infected the milk as early as her estimated onset of June 21, the cases occurring in July using the Moll and Morgan supplies may logically be suspected of having contracted the disease through this medium. It was learned that eight of the 12 cases having onsets in July used the Moll or Morgan supplies and another case may have used the Morgan milk through another dealer. Samples

of water were secured from the well at the Moll residence and from the Dengler well used by the Morgan family, and analyzed at the Department laboratories. The results of analyses indicated the presence of B. coli in the water from the Dengler well. At this well water is obtained by dipping a bucket and the unsatisfactory results may have been due to this practice. However, the proximity of a privy vault indicated the possibility of pollution reaching the well from this source. No record of typhoid fever could be discovered at the premises. The owner of the well was notified of the danger attending its use and advised to abandon this supply.

It appears that most of Morgan's supply was sold in Port Carbon and most of the Moll supply in St. Clair. Twelve of the 13 cases occurring in Port Carbon used the Morgan milk and four of the five cases in St. Clair received the Moll supply. All of the cases received milk in their own vessels from dealers' cans so there was no possibility of bottle infection being a factor.

Upon learning of Mrs. Morgan's illness and owing to the number of cases in the community using the Moll and Morgan supplies, these dealers were directed to properly disinfect their utensils, etc., and until the sources of supply were investigated, the serving of milk was abandoned.

In summation, the factors which directed suspicion to the milk supply of Morgan and Moll as the probable transmissive agent responsible for the majority of the cases of the outbreak, were as follows: The fact that the great majority of the cases used milk from one or the other of these supplies, the illness of Mrs. Morgan, the sewage polluted water supplies at three of the farms supplying milk to these dealers and at the Dengler well used by the Morgan family and the possibility of some one of the individuals having typhoid fever histories at the dairy farms supplying these dealers, being an intermittent typhoid fever carrier.

RENOVO TYPHOID FEVER OUTBREAK.

This investigation was the result of the following letter from the county medical inspector:

"Lock Haven, Sept. 11, 1915.

"Samuel G. Dixon, M. D.,

"Commissioner, Harrisburg.

"Dear Doctor:—Dr. Fullmer, of Renovo, has just telephoned me that he thinks there is a source of contagion of typhoid existing about two miles above Hyner, Chapman Township. As near as I could make out from his message, some five cases of typhoid existing in Renovo and one now in Milesburg, Centre County. Some time since these parties all attended a dinner about two miles up Hyner Run and it is supposed they contracted the disease at that dinner. None of these cases have been reported to me owing to the fact that five are in Renovo Borough and the other in Centre County. What action shall I take in this matter?

"Yours,

"R. B. WATSON, C. M. I."

It appears that on Sunday, August 8th, a family reunion was held at the home of Mr. and Mrs. James Kelly, situated on a farm in Chapman Township, Clinton County along Hyner Creek at a point approximately seven miles east of the borough of Renovo. Nineteen people attended the reunion, including the occupants of the farmhouse, Mr. and Mrs. James Kelly. The names of the people who were present are as follows:

Theodore Green,
Mrs. Theodore Green,
Joseph Green,
LeRoy Green,
Caroline Green,
Herman Green,
Mrs. Nelson Weaver,
Mrs. George M. Kelly,
Blanche Kelly,
Earle Kelly,
George Kelly,
James Kelly,
Mrs. James Kelly,
Willard Kelly,
Mrs. Willard Kelly,
Elgie Kelly,
Marie Kelly,
Delmar Kelly,
Lewis Peters.

The first eleven people mentioned reside in Renovo, the next two live on the farm in question, the next five reside at a small farmhouse about a quarter of a mile up Hyner Creek and the last person resides in Milesburg, although he visited the home of Mrs. George M. Kelly the day before the reunion. George M. Kelly, the husband of Mrs. George M. Kelly, was unable to attend the reunion, but visited his parents at the farmhouse on Tuesday, August 10th, remaining for supper.

Those persons attending the reunion remained for dinner and supper, returning to their respective homes in the evening of August 8th. The reunion was more in the nature of a picnic as all food with the exception of potatoes and onions was brought from Renovo by the visitors. The food consisted of the following:

Boiled ham,
Salmon loaf,
Beef loaf,
Bologna,
Various kinds of cakes,
Pickled eggs,
Pickled beets,
Cheese,
Olives,
Bread and buns,
Cantaloupes,
Watermelon,
Bananas,
Beefsteak,
Canned baked beans,
Potatoes and
Onions from garden at farm.

Water for drinking and making coffee was secured from a spring on the premises. This spring is located about 400 feet from the house at the base of a hill and approximately 350 feet from a surface privy, being in the immediate vicinity of a cultivated field. It is reported that no manure or other fertilizer is used on this field.

Nine of the people present sat down at the first table at supper. One cow is kept at the farm, Mrs. James Kelly, aged 86, doing all the milking when she is at home. She and her husband reside at the farm approximately one-half the year, visiting relatives during the fall and winter in Renovo. No milk was used at dinner except in the coffee. At supper milk was available for drinking purposes for those at the first table. Of the nine people at the first table eight drank milk. Five partook of it freely, three consumed slight amounts and the other one drank no milk. The five people partaking freely of the milk all contracted typhoid fever, and were the only ones at the reunion who contracted the disease. However, Herman Green, aged 6, who was at the first table, is reported to have had about a half glass of milk. He suffered about August 23 with a slight attack of diarrhea, being confined to his bed for a week. Typhoid fever did not develop in this case. George M. Kelly who went to the farm for supper on Tuesday, two days following the reunion, ate nothing but bread and milk, and also contracted typhoid fever.

Mr. and Mrs. James Kelly have lived at the farmhouse in question for four years. The cow from which the milk used at the reunion was obtained has been in the possession of the family for two years. This cow produces about 12 quarts of milk a day, and all in excess of that consumed by Mr. and Mrs. James Kelly is sold to three neighbors, this being almost a daily custom during the past two years. These neighbors are George Azer, Joe Shade and Willard Kelly. There are four in the Azer family including two small children; five in the Shade family with two small children; and five in the Willard Kelly family, three of whom are children. No cases of typhoid fever have occurred in any of these families. All the members of the Willard Kelly family were at the reunion, although none of them drank milk at that time.

Water for washing purposes including the cleansing of the milk utensils is obtained from a small branch of Hyner Creek about 125 feet distant from the house. There is a dug well on the premises immediately adjacent to the house. This well is liable to surface contamination, but water therefrom has not been used for any purposes this year. On the watershed of Hyner Creek above the Kelly farmhouse there are three properties. An inspection of these premises revealed no pollutions and also the fact that no cases of typhoid fever had occurred therein during the past four years.

On Monday, August 9th, one day after the reunion at the Kelly farm, a picnic was held on an island in the Susquehanna River opposite the borough of Renovo. Six people attended this picnic. All of these people were at the reunion at the Kelly farm, and four of them contracted typhoid fever. The other two cases which contracted the disease were not at the picnic on the island. Water at this picnic was obtained from a spring on the island and was the only beverage used with the exception of coffee.

Mrs. James Kelly, who lives on the farm at which the reunion was held had typhoid fever in October, 1905, ten years ago. It was the original intention to invite approximately forty people to attend the family reunion held on August 8th.

However, the day before the reunion Mrs. Kelly had an attack of cholera morbus accompanied with diarrhea. Mrs. Kelly was not confined to her bed, and it is reported that this is the first time in recent years that she had not been in good health. She milked the cow on the day of the reunion as well as on at least the two previous days. When Mrs. Kelly is absent from the farm the cow is attended to by the neighbors.

Lewis Peters, of Milesburg, who came to Renovo on August 7th, and returned to Milesburg on August 10th, became ill on the 18th. He was taken to the Bellefonte Hospital. The next case was that of Earle Kelly, aged 13, who was taken sick August 20th. Joseph Green, age 21, became ill on the 22nd of August, and Caroline Green and LeRoy Green, all members of the same family, and aged 18 and 14, respectively, became ill on August 23rd. George M. Kelly, who did not attend the reunion, but who partook of a bread and milk supper at the farm on August 10th, was taken ill on August 24th. All these latter five cases are in the Renovo Hospital.

Both the Kelly family and the Green family residing in Renovo use the public water supply. The Kelly family obtains milk from a dealer by the name of Schwenk, being shipped from Muncy and Montgomery. The Green family obtains milk from the Miller store in Renovo, which in turn obtains it from dairy farms in the vicinity of Jersey Shore. None of the patients residing in Renovo were out of town two weeks prior to the day of the reunion except George M. Kelly, a flagman on the Pennsylvania Railroad operating between Renovo and Kane, and Joseph Green, who was in Buffalo, August 18th, four days prior to his onset. There is no history of previous cases of typhoid fever in the families of any of the patients with the exception of Mrs. James Kelly who had it ten years ago.

During the course of the investigation samples of water were collected from the supplies used at the James Kelly farm and from various taps on the public supply in Renovo, and the distributing system in the shops of the Pennsylvania Railroad Company. A sample was also taken of the milk furnished by the cow on the James Kelly farm. The results of these samples are shown below:

	Bacteria per c. c.	B. Coli per c. c.
No. 1, spring at James Kelly,	720	0
No. 2, Hyner Creek at James Kelly,	240	0
No. 3, milk from cow at James Kelly,	224,000	0
No. 4, tap Pennsylvania Railroad office,	136	0
No. 5, tap Pennsylvania Railroad machine shops,	112	1
No. 6, H. M. Hogenbery, 900 Huron Ave.,	176	3
No. 7, tap Theodore Green, 241 11th St.,	96	2
No. 8, tap Frable boarding house, 338 St. Clair Ave.,	240	6
No. 9, tap George Kelly, 338 Huron Ave.,	1,440	4

Due to the fact that there was but one other case of typhoid fever in Renovo at the time of the recent investigation, an employe of the Pennsylvania Railroad Company, who had been out of town frequently prior to his illness, it would appear that the infection was probably transmitted at the reunion of August 8th, for all six cases became ill from 10 to 16 days after the picnic. It also is logical to infer that the milk supply was probably the cause as but nine persons drank milk, including all those who subsequently contracted the disease. One of the three remaining persons who drank milk was confined to bed for a week with diarrhea, and the other two drank but a very small amount.

As the milk from this cow had been used for two years by the Kelly family and by three neighbors without a resulting case of typhoid fever, it is probable that the infection was temporary. Mrs. James Kelly, aged 86, who milks the cow during the time she resides at the farm, including the day of the reunion and the one before, had typhoid fever about 1905. Analysis of feces and urine of both Mr. and Mrs. James Kelly made at the Department laboratories in September, 1915 of samples collected by R. B. Watson, county medical inspector, six weeks after the reunion did not show the presence of bacillus typhosus. However, Mrs. Kelly was ill with diarrhea immediately prior to and on the day of the reunion, and it is possible that infection may have been transmitted to the milk at that time. She was in good health at the time the samples were collected and the fact that the bacillus typhosus was not found at that time is not conclusive that they were not present when she was in a weakened condition caused by the attack of diarrhea.

TYPHOID FEVER AT SALTILLO.

On June 29, 1915, Dr. H. G. Horton, of Three Springs, Huntingdon County, notified the Department by telephone of the prevalence of an undue amount of typhoid fever in the neighboring borough of Saltillo. The undersigned, an assistant engineer, accompanied by Assistant Engineer Fortenbaugh, proceeded to the borough on June

30, for the purpose of investigating the outbreak and to put into effect such measures for its control as seemed necessary. The investigation was carried out during the first week of July. Eight cases occurring between June 15th and June 21st, were reported and investigated.

General Conditions.

The borough of Saltillo, population 500, is located in the south central part of Huntingdon County on the East Broad Top Railroad, which has its western terminus at Mt. Union borough on the main line of the Pennsylvania Railroad. The borough is a residential community. From 30 to 40 of the citizens are employed in the mines at Robertsdale and Wooddale, villages seven miles southwest of the borough. Three Springs Creek passes through the borough and receives all the drainage. Main Street is parallel to the creek and about 300 feet distant.

Water Works.

The borough does not have a general public water supply. There are, however, four separate semi-public water systems. These may be designated as the Fisher, Kimmel, Weaver and Rupert systems, supplying 185, 75, 30 and 15 persons, respectively. The supply in each case is obtained from well-protected springs on the mountain side.

The inhabitants not supplied by either of the above systems obtain their water either from wells or springs on their own premises or from springs which may be regarded as public springs. There are four such springs known as the Amanda Shope spring, the Fleming spring, the Sugar spring and the Albert Sollers spring.

The Amanda Shope spring is unique in that it is located on a small island in the middle of Three Springs Creek in the southern part of the town. The spring has been confined in a tile set on end around which a masonry wall has been built to a height of about 4 feet. The tile has been carried to the top of the wall and sealed. A discharge pipe leads from the tile through the wall and from this pipe water is obtained. The source seems to be deep-seated, since during the investigation the creek became quite turbid while at the same time the water from the spring was clear.

The Fleming spring is situated in front of the carriage repair shop of J. H. Fleming and within 20 feet of Main Street. The water is confined in a 24-inch tile extending 9 feet below the ground surface and projecting 12 inches above the surface. The top of the tile is open and water is obtained by dipping. Water from the spring is piped into the Fleming residence nearby. The water level is about 12 inches below the ground surface. It is reported that this spring has been in use for approximately 30 years. The Sollers spring is in a depression in the corner of the premises just south of Sugar Spring Street. To the east, north and west the ground rises from the spring. There are at least four dwellings within 150 feet and all on higher ground. A tile open on the top has been placed on end over the spring. Persons using this water must obtain it by dipping. The spring was not properly protected against surface drainage and became very turbid after rains. Two hundred feet from the spring, on the property of Miles Cornelius, there is a cesspool. Coloring matter placed in the cesspool on July 1, 1915, was not detected in the spring.

What may be termed the town spring is locally known as Sugar spring. It is 50 feet west of Main Street and considerable lower. Steps lead from Main Street to a declivity down which one must pass to reach the spring. It is reported that the spring formerly issued at the roots of a large sugar maple which has since been removed. The spring is now walled in and covered, but access to the interior may be had through the open front. People dip water from the spring in containers which they bring there. Surface drainage is carried around the spring and diverted into the small stream formed by the overflow. The spring evidently has a deep-seated source. Although there was excessive rainfall during the time of the investigation, there was no evidence of turbidity in the water.

On ground considerably higher than Sugar spring and about 200 feet distant at the residence of Rev. Mr. Strayer is a cesspool dug in 1915. It is 8 feet in diameter and 4 feet deep, the upper 10 inches being driven through a loose formation. Below this a more compact rock was encountered, but no limestone. It is reported that Mrs. Strayer had typhoid fever in 1882, and Mr. Strayer the disease twice, the last time about 40 years ago and the first time about 17 years previous. A heavy dose of uranine coloring placed in the cesspool at 4 p. m., June 30, 1915, could not be detected in Sugar spring or in a spring closer to the cesspool on a property formerly occupied by Dr. Heaton.

The Fleming spring is about 450 feet southwest of the Strayer cesspool. The day following the time when the coloring matter was placed in the cesspool, water in the Fleming spring changed somewhat, appearing to have a greenish tint in the spring. This tint was not so marked when water was taken out in a bucket or a glass. Mr. Fleming states that during the last 30 years the spring has changed color only on one or two occasions. He feels convinced that the cesspool is responsible.

The underlying rock strata slopes from Jacks Mountain toward the creek. It appears possible, therefore, for contamination from the upper parts of the town to reach these spring supplies in the lowly sections along the creek by following along the strata.

Sewage.

There is no public sewer system in the town. Outdoor privies are in common use. Out of 119 buildings in the borough 16 are connected with private sewers which discharge into the creek, six have cesspools, and the rest are provided with privies.

Typhoid Fever.

The records relating to typhoid fever in Saltillo for former years are incomplete. Locally, however, it is reported that prior to the introduction of water into the borough by way of the various systems typhoid fever was in a sense endemic. Subsequently, the disease was practically unknown up until the time of the outbreak herein referred to.

Typhoid Fever in 1915.

In June 1915, there were six cases of typhoid fever in Saltillo and two in other communities that can be referred to Saltillo. The data collected during the investigation is the basis for the following tables:

Onsets.

Date.	No. of Cases.
June 15,	1
June 16,	2
June 17,	2
June 18,	1
June 21,	2
Total,	8

Occupation.

	M.	F.
Housewife,	..	1
Child,	1	..
Miner,	2	..
Clerk,	1	..
School girl,	..	2
Student,	..	1

Age and Sex Distribution.

Ages.	M.	F.	Total.
0- 4,	1	..	1
5- 9,	..	1	1
10-14,	..	1	1
15-19,	1	1	2
20-24,	..	..	..
25-29,	..	..	..
30-34,	..	..	..
35-39,	1	..	1
40-44,	1	1	2

Water Supply.

Sugar spring only,	2
Sugar spring and well,	1
Sugar spring and other spring,	2
Sugar spring and Fisher spring,	1
Sugar spring and various,	1
Various,	1
Total,	8

Ice Cream.

Hoffmans,	1
Home-made & Hoffmans,	3
Home-made,	1
None,	1
Unknown,	2
Total,	8

Milk Supplies.

Various,	3
Condensed,	1
Nycum,	1
Fleming,	1
Roles,	2
Total,	8

None of the cases gave a history of contact with previous cases.
Ice, fruits and vegetables were eliminated as not possible sources of infection.

Discussion.

While the facts regarding typhoid cases as secured are not definite enough to form a positive conclusion as to the source of infection, yet they do direct attention to the possibility of contamination of the springs considerably used by the towns-

people. These springs are well situated to receive contamination from the higher levels of the town, providing there is a connection between the surface and their underground sources of supply.

Moreover, in the case of the Fleming spring and the Sugar spring contamination may result from dipping the water from these sources of supply with miscellaneous containers used by the people carrying water from the springs.

It would be far safer to establish a public water system, obtaining its supply from safe sources and serving the entire borough, than to continue the use of these dangerous springs in the borough. The systems at present installed do not appear to be capable of such further extension unless some provision is made to store the water.

Remedial Measures.

Sugar spring was thoroughly treated with a large quantity of quicklime. Notices were posted cautioning the people of the danger attending the use of this water and instructions were given to cease the practice of obtaining water by dipping from the other springs in the borough.

It was recommended that the borough authorities make every effort to secure the installation of a public water supply from safe sources.

TYPHOID FEVER OUTBREAK AT SCALP LEVEL BOROUGH, CAMBRIA COUNTY.

On June 18, 1915, the Richland Township Water Company, serving water in the borough of Scalp Level, Cambria County, notified the Department of an outbreak of typhoid fever in that municipality and requested assistance. Forty cases occurring from May 30th to July 1st, inclusive, were ultimately reported and investigated. The undersigned assistant engineer conducted an investigation from June 19 to June 24, 1915. Inspector L. S. Imler assisted in the investigation and did some follow-up work subsequent to June 24th.

General Conditions.

Scalp Level Borough lies about 9 miles southeast of the City of Johnstown, along the southern boundary line of Cambria County. It had a population in 1910 of 1,424. Immediately adjacent to this borough, but in Somerset County, to the south lie the boroughs of Paint and Windber. The former had a population of 999 in 1910 and the latter 8,013. Paint borough lies due south of Scalp Level borough with Windber just to the east. The three form one community, having a combined population in 1910 of approximately 10,000 people. The three boroughs owe their growth to the operations of the Berwind-White Coal Mining Company, which operates numerous mines in the vicinity.

The village at Eureaka No. 40, is in the extreme northeastern corner of Scalp Level borough and is reported to be owned by the Berwind-White Coal Mining Company. The houses are occupied by employes of this concern. They are of frame construction, built double and located on three streets, extending approximately east and west about midway in the settlement. Water Street extends through the community at right angles to the three streets just named. Thirty-one cases occurred in this settlement.

This district is in Paint Creek valley, a stream which drains Richland, Adams and part of Paint Township. The first two are in Cambria County and the latter in Somerset. Paint Creek enters Stony Creek about three miles below Scalp Level. About four miles above the mouth of Paint Creek, Shade Creek enters Stoney Creek, draining portions of Ogle, Shade and Paint Townships.

Sewerage.

There is no sewer system in Scalp Level or in Paint. The borough of Windber has a sewer system, the discharge of which enters Paint Creek.

Public Water Supply.

There are three water companies operating in this district, all of them serving water for both domestic and industrial purposes. The Richland Township Water Company has its source of supply in Little Paint Creek, a tributary of Paint Creek,

and supplies Scalp Level and a portion of Richland Township. The Paint Township Water Company obtains water from Paint Creek and supplied at the time of this investigation water for domestic purposes only in the village at Eureaka No. 42 in Adams Township. This water was formerly served in Windber, but upon the advice of the Department it was excluded because drainage from the villages at Eureka No. 42 found its way into Paint Creek above the reservoir.

The entire supply for Windber was being obtained through the Windber Water & Power Company, from Clear Shade Creek, a tributary of Shade Creek. This supply is furnished also to the inhabitants of Paint borough and the pipe lines of this system extend into Scalp Level borough and connect at a point in the south central part of the borough with the distribution system of the Richland Township Water Company. From this point of connection a supply main extends over the hills through Scalp Level borough to a mining village known as Eureka No. 37, situated in Richland Township, Cambria County. It is the opinion of the water company officials that at times some of the Clear Shade Creek supply reached this community but that ordinarily the village was furnished with water from the supply used by the Richland Township Water Company, namely, Little Paint Creek. It is just possible that at times a mixture of the two supplies entered this community.

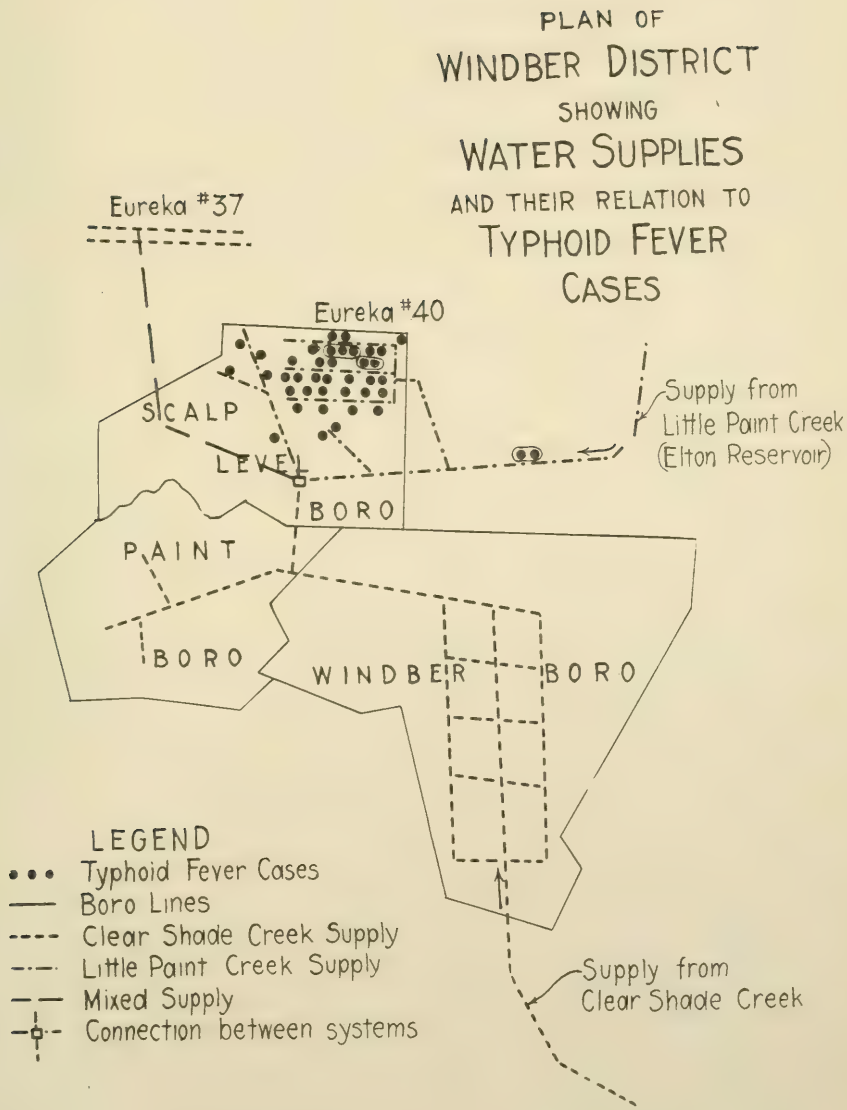
Scalp Level borough, although there was this connection between the two systems, is generally conceded by the officials of the company to receive its supply from Little Paint Creek through the system of the Richland Township Water Company. Under the piping conditions that existed at that time, it was possible to serve the lower elevations in this borough with water from the Clear Shade Creek system. That this water did not reach the upper levels of the town was demonstrated during the course of the investigation when the supply from Little Paint Creek was shut off, whereupon the upper levels of the town were without a water supply, notably the mining village Eureka No. 40, in the northeastern corner of the borough, where 1,000 people reside in company houses. The accompanying sketch shows diagramatically the distribution of these various water supplies in the district described as well as the location of the typhoid fever cases occurring during this outbreak.

At the time of the investigation all of the water coming into the district from both sources of supply was being treated with chlorinated lime by means of crude treatment plants. The plant on the Clear Shade Creek supply is placed at one of the pressure relief basins in the gravity supply main leading from the reservoir into the district. The apparatus for dosing the water on the Little Paint Creek supply was installed in the valve house at the Elton reservoir at which point this water supply is impounded. This plant was installed on November 19, 1912, that on the Clear Shade Creek supply a little later.

The assistance of the Department was asked by the Richland Township Water Company on November 14, 1912, to install a chlorinated lime water treatment plant at the Elton reservoir because of apprehensions on the part of the water company officials that this source of supply might be infected from a case of typhoid fever in the village of Elton above the reservoir. A representative of the Department supervised the construction of this apparatus and a complete report on the investigation made at the time is to be found in the report of the Commissioner of Health for 1912, Part 2. Fortunately there was no outbreak of typhoid fever in the district supplied from this source, yet the Department has on numerous occasions called the attention of the water companies to the fact that it looked upon the sources of supply used by them, namely Little Paint Creek and Clear Shade Creek, as not being above suspicion. A decree has been issued requiring the Windber Water & Power Company to make a comprehensive study of the entire question of water supply and to prepare a report. Up to the end of the year 1915, this report has not been received by the Department.

Clear Shade Creek rises in Ogle Township, Somerset County, about eight miles east of Windber and flows thence in a southwesterly direction for about ten miles to its junction with Dark Shade Creek, the two streams forming Shade Creek. About two miles above the junction the Windber Water and Power Company has constructed a dam, forming a reservoir holding six million gallons of water. Above this intake the creek has a drainage area of 19 square miles on which there is a population of approximately 120, most of the inhabitants living near the head waters of Clear Shade Creek in a little village called Ogletown. The watershed has been inspected several times by Department officers and is under a monthly patrol by the water company.

The Richland Township Water Company has a reservoir on Little Paint Creek about two miles above Scalp Level borough, above which is a watershed containing approximately six square miles, partly under cultivation, and a population of about 400. The village of Elton, Adams Township, is situated on the stream about one mile above the reservoir and has a population of about 250. The town is not sewered but the natural drainage is into Little Paint Creek. Several sanitary inspections have been made by the Department of this watershed and notices for the abatement of stream pollutions issued. According to an inspection made during 1912, out of a total of 114 properties, 19 were found to be polluting agencies. At the time of this typhoid fever outbreak in Scalp Level but very few of these pollutions remained unabated. The Elton reservoir, as it is called, is formed by a timber crib dam having a rock fill with the down-stream side vertical and the up-stream side


PLAN OF
WINDBER DISTRICT
SHOWING
WATER SUPPLIES
AND THEIR RELATION TO
TYPHOID FEVER
CASES
Eureka #37
Eureka #40
SCALP
LEVEL
BORO
PAINT
BORO
WINDBER
BORO
Supply from
Little Paint Creek
(Elton Reservoir)
Supply from
Clear Shade Creek
LEGEND
Typhoid Fever Cases
Boro Lines
Clear Shade Creek Supply
Little Paint Creek Supply
Mixed Supply
Connection between systems

sloping and covered with plank against which an earthen embankment has been placed. The dam is about 250 feet long and has a spillway 30 feet wide. Because of deterioration of the dam the spillway had been cut down to such an extent as to reduce the capacity of the basin to probably not more than two million gallons, giving it a shallow depth and flooding an area of about one acre in extent.

A branch of the Pennsylvania Railroad crosses the watershed of Little Paint Creek above the water company's intake and in several instances parallels and runs close to the stream. Over this line several passenger trains are operated daily.

Fifty feet up-stream from the dam is a circular valve tower surmounted by a wooden structure. This is about 15 feet inside diameter and the water enters the tower through valved ports placed in the periphery and leaves through an 8-inch valved gravity supply main extending down the valley of Little Paint Creek to the borough of Scalp Level, entering this municipality at the eastern side near the village of Eureka No. 40, after passing which, the main extends on past the power house to the main street in the borough of Scalp Level, here connecting with the distribution pipe in this street. Just beyond is the connection with the system carrying the supply from Cedar Shade Creek. This supply from the Elton reservoir was the normal supply in Scalp Level until June 20, 1915, at which time, because of the outbreak of typhoid fever and suspicions as to the purity of this supply and upon the advice of the State Department of Health, it was cut out and the supply from Clear Shade Creek turned in. This latter supply since then has been the only supply in the district.

Typhoid Fever Outbreak.

Records that are available indicate that this district has not had a high morbidity rate of typhoid fever in the past. The present outbreak assumed the proportions of a small epidemic, 40 cases of typhoid fever occurring between May 30th and July 1st. All of these either resided in Scalp Level or bear some distinct relation to this community.

The data relative to the forty cases of typhoid fever investigated by the Department officers are the basis of the following tables:

Date of onset.	No. of Cases.	Date of onset.	No. of Cases.
May 30,	1	June 14,	2
June 1,	1	June 15,	2
June 5,	1	June 18,	2
June 6,	1	June 19,	1
June 7,	2	June 20,	4
June 9,	3	June 21,	3
June 10,	1	June 22,	3
June 11,	3	June 24,	1
June 12,	6	June 29,	1
June 13,	1	July 1,	1
		Total,	40

Age Period.	Age and Sex Distribution.			Age Period.	Age and Sex Distribution.		
	Male.	Female.	Total.		Male.	Female.	Total.
0-4,	1	0	1	35-39,	1	1	2
5-9,	3	3	6	40-44,	0	0	0
10-14,	4	5	9	45-49,	0	0	0
15-19,	4	0	4	50-+,	1	0	1
20-24,	6	1	7				
25-29,	5	1	6				
30-34,	3	1	4	Total,	28	12	40

Occupations. Classification.	No. of Cases.	Nationalities.	No. of Cases.
At home,	3	American,	12
Housewife,	4	Polish,	7
School child,	13	Slavish,	9
Miner,	16	Hungarian,	7
Police and miner,	1	Austrian,	2
Laborer,	2	Welsh,	1
Power plant engineer,	1	Unknown,	2
Total,	40	Total,	40

Geographical Distribution.

Thirty-three of the 40 cases were in as many houses. In two houses there were two cases each, and in one household there were three cases. In the 36 households affected there was a total population of about 230 and a morbidity rate of 17.4%.

In the village of Eureaka No. 40 the cases were fairly well distributed throughout the entire settlement, nine on Second Street, twelve on Third Street and ten on Fourth Street, a total of 31. All of these were single cases in separate houses except for the three cases in one house and one of the groups of two cases to a house. This grouping would indicate a more or less general infection. From east to west the village has a maximum length of 1,300 feet and from north to south a depth of 900 feet. In the household where there were three cases one had an onset June 10th and the other two on June 11th. In the house where there were two cases the onsets were June 12th and 15th, respectively. It thus appears that all of these cases probably were primaries. In this community many of the houses were unscreened and flies may have been a secondary factor in distributing the typhoid.

Of the remaining nine cases, three resided on the main street in Scalp Level along the gravity supply main leading from the Elton reservoir into Scalp Level, so one in a store on the main street, one at No. 40 mine, these two men residing in a village at Eureka No. 37, and the other man being an employe at the power house in Scalp Level and residing in Windber. The two remaining cases occurred in one family about a half mile east of Scalp Level, their residence being situated along the gravity supply main leading from the Elton reservoir into Scalp Level, so that this family together with one or two neighbors were the first to receive this water supply after it left the reservoir. The second case in the outbreak was a child residing in this family.

The attached diagram shows the distribution of the cases with their relation to the water supply.

Water Supply. Supply.	No. of Cases.	Milk Supplies. Name of Dealer.	No. of Cases.
Elton reservoir supply only,	30	Munkley,	2
Elton reservoir supply and various springs,	5	Baldigo and Wissinger,	1
Elton reservoir supply and various others,	5	Vail,	2
		Own cow,	6
		Berkey,	1
		Berkey and other,	1
		Wissinger,	9
		Wissinger and others,	1
		Charnedo and Hostetter,	1
		Bartaco,	1
		Franshok,	1
		A neighbor,	1
		Condensed,	9
		Unknown,	4
Total,	40	Total,	40

Foodstuffs.

Shell-fish, uncooked vegetables, fruit and ice cream were eliminated as not possible sources of infection.

None of the patients are reported to have visited, during the 30 days preceding the onset, any place where there already was a case of typhoid fever.

Twenty-two of the cases were nursed at home, the other 18 being removed to the Windber Hospital. Practically all of those who remained at home, especially at Eureka No. 40, were more or less under the supervision of the coal company's physician, and this probably kept down the number of secondaries.

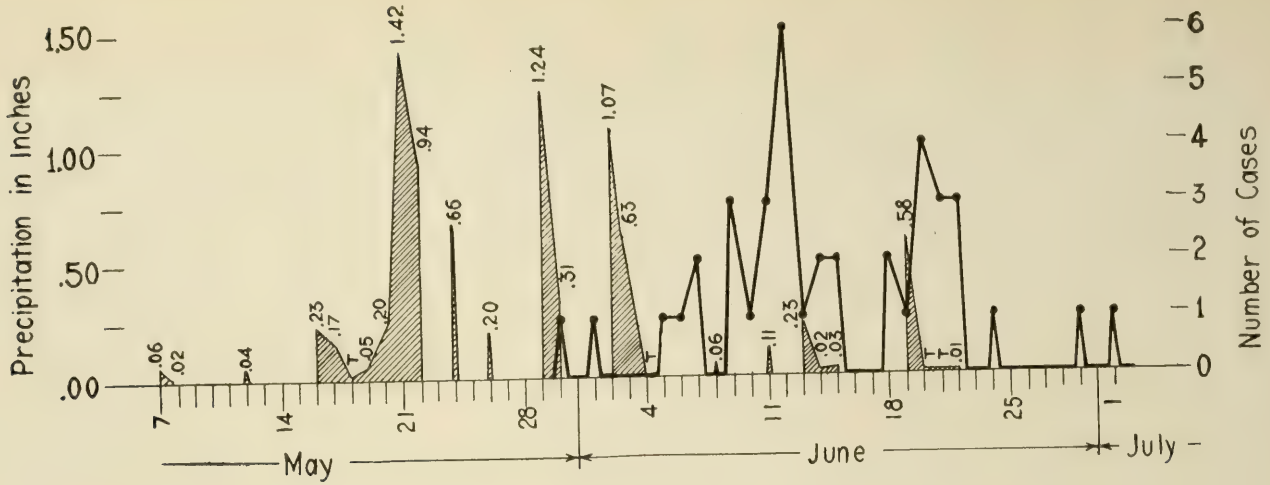


DIAGRAM SHOWING

ONSET OF TYPHOID FEVER CASES

IN RELATION TO

PRECIPITATION

SCALP LEVEL

EPIDEMIC OF 1915

Typhoid Fever Menace to Water Supply.

During the investigation suspicion was directed against the water obtained from Little Paint Creek by the Richland Township Water Company and supplied to the residents of the borough of Scalp Level. A record was obtained of two cases of typhoid fever on this watershed above the intake. One was Harry Crawford, aged 40, a resident of the village of Elton. His onset date was May 25th. He is a building contractor and did construction work at Elton, Wilmore and various other places prior to his illness, usually spending Sunday and occasionally a week-end at home. Sanitary conditions at his residence were found to be good and the dejecta properly cared for.

The other case on this watershed was that of J. M. Hoffman aged 29, a real estate agent with an office at Johnstown, where he was taken sick on May 10th. After this date he was removed to his father's home in Richland Township on a tributary of Little Paint Creek above the Richland Township Water Company's intake. The conditions about this property were also good. The excreta were disinfected and buried in a pit several hundred feet from the stream.

There did not seem to be any likelihood at all that these cases had been the source of infection of this water supply. A more probable source was discovered in the presence of two construction camps on the watershed above the intake. These were being maintained by the Dravo Contracting Company, which concern was engaged in sinking two shafts for the Berwind-White Coal Mining Company. The two camps were distant from each other possibly a mile and a half, both close to the stream. They were designated as Camp No. 35, to the west, and Camp No. 36, to the east, both of them being slightly north of the village of Elton.

At Camp No. 35 fifty men were working, this operation having been started in the summer of 1914. About one-half of this force were negroes and the other half Slavs, all of them living in the camp, there being seven bunk houses. The personnel changed constantly, the workmen remaining from a few days to a maximum of about a month.

The company's physician, when interviewed, stated that he had had no cases of typhoid fever at either of the camps nor had there been any diarrheal or dysenterial trouble, but one of the workmen at Camp No. 35 says that there was some diarrhea among the men there. Piles of excrement were discovered on the ground outside of the privies in such a position that a hard rain might wash it into the stream. The men had been instructed to use the privies but there is every reason to believe that they did not always do so. Moreover pollutions occurred in the shafts while the workmen were working there and the water from the shafts was pumped into the stream nearby.

Although no record is avalable of any cases of typhoid fever at either of these camps, yet considering the character of the workmen employed there and the transient nature of the force, it is reasonable to suppose that there may have been among all of the men coming and going an incipient or convalescing case of typhoid fever or possibly one or more carriers, and from the evidence of carelessness about the camps it would have been an easy matter for infected material to reach the stream. From this aspect of the case the record of rainfall in the district is interesting.

From the records kept by E. C. Lorentz, of Johnstown, a co-operative weather observer, the precipitation for April, May and June up to and including the 22nd appears as shown in the following table:

RECORD OF PRECIPITATION IN INCHES FOR SEVERAL MONTHS IN 1915 AT JOHNSTOWN.

Day.	April.	May.	June.	Day.	April.	May.	June.
1,	T	.09	.06	18,	.00	T	.00
2,	T	.00	1.07	19,	.09	.05	.58
3,	.00	.08	.63	20,	.02	.20	T
4,	.09	.54	T	21,	.00	1.42	T
5,	.01	T	.00	22,	.01	.94	.01
6,	.03	.00	.00	23,	.13	.00	
7,	.60	.06	.00	24,	.01	.66	
8,	.00	.02	.06	25,	.01	.60	
9,	.00	.00	.00	26,	.00	.20	
10,	T	.00	.00	27,	.00	.00	
11,	.34	.00	.11	28,	.11	.00	
12,	.06	.64	.00	29,	.09	1.24	
13,	.00	.00	.23	30,	.00	.31	
14,	.00	.00	.02	31,		.00	
15,	.00	.00	.03				
16,	.01	.23	.00				
17,	T	.17	.00	Total,	.93	6.45	

These were the figures for Johnstown and the observer believed that they were, to a large extent, applicable to the territory drained by Little Paint Creek.

From the above it will be noted that April was a month of light rainfall, but in May there was a toal of 6.45 inches. The outbreak occurring at the extreme end of May and the first part of June, would direct attention to weather conditions during May. During the first week of the month on only one day was there a storm of any magnitude, this occurring on the 4th with a precipitation of 0.54 inches. On the 7th and 8th there was a slight rain and no other then until the 12th when a slight rain occurred. But beginning with the 16th there was rain on each succeeding day up to and including the 22nd, the storm reaching its height on the 21st when 1.42 inches of rain fell and the day following 0.94 inches of rain fell. Fourteen days after the start of this storm the first case of typhoid fever occurred in Scalp Level, followed two days later by another case. Within a two weeks' period three cases had come down, while three weeks after May 22nd, there was a total of 19 cases.

On May 24th and on May 26th there was precipitation of 0.66 inches and 0.20 inches, respectively, followed three days later by a two days' rain, on the 29th, 1.24 inches falling and on the 30th, 0.31 inches falling. Again there was an interval of two days followed by a three days' rain, the precipitation records showing a rainfall of 1.07 inches, 0.63 inches and a trace on June 2nd, 3rd and 4th, respectively. The other rains in the month all occurred after the 8th of June and too late to have influenced this outbreak. But from the above records it appears that beginning on May 16th up to and including June 4th, on 14 out of a total of 20 days, there were storms of more or less severity and within two weeks after the last-named date 26 cases of typhoid fever had occurred in Scalp Level. To say the least the coincidence in time between the storms and the occurrence of typhoid fever in this locality is striking, and made more so by the fact that a close analysis of the other facts relating to these cases enables one to practically exclude all other probable sources of infection, thus throwing a strong suspicion on this water supply as having been the cause of this outbreak. The relation between the precipitation and the typhoid fever cases is graphically shown in the accompanying diagram.

On June 20th, over two weeks after the last heavy and long-continued rain, samples of water obtained from hydrants in the borough showed high total counts and one of them revealed the presence of B. coli in one cubic centimeter. The water in the reservoir at this time was clear and could not be considered as typical of the water that passed through this basin prior to this date.

On June 24th the Richland Township Water Company collected four samples of its supply, one each at Camp No. 35 and Camp No. 36, one from Hoffman's Run, a tributary of Little Paint Creek and the fourth sample from Little Paint Creek at Elton reservoir. All of these samples with the exception of the one collected at Camp No. 35 showed the presence of 10 B. coli per cubic centimeter. The sample at Camp No. 35 showing a total count of 120 with no B. coli in 1 cubic centimeter.

Remedial Measures.

On the day following the arrival of the Department's officers in Scalp Level, samples of the Little Paint Creek supply were secured for analysis. On the same day, by advice of the Department's officers, this supply was shut off and the water from the Clear Shade Creek source turned into the distribution system in Scalp Level. Also on the same day notices were posted in Scalp Level and Paint boroughs advising the people to boil all water used for domestic purposes and, in addition to this, verbal instructions were disseminated throughout the village at Eureka No. 40. Also on this date the distribution lines in Scalp Level were flushed through the fire hydrants.

On June 21st the Elton reservoir was drained and a large amount of sediment was found in this basin.

From a record furnished by the water company it appears that no water from the Elton reservoir was supplied in Scalp Level proper or at the village at Eureka No. 40 for domestic supply either in dwellings, at the power plant or the mine after June 20th; nor has any supply, except that from Clear Shade Creek, been furnished since that date. The water from the Elton reservoir was furnished for boiler uses at the power plant at No. 40 mine and to the Pennsylvania Railroad tank at Paint Creek junction, at the former place from June 27 and at the latter place from August 10th. This water was treated with a disinfectant until October 11th, in order to insure against danger from its possible use by employes contrary to instructions.

Verbal instructions were given the foreman at Camps No. 35 and No. 36 relative to the maintenance of those camps in a sanitary manner. This matter was also brought to the attention of the officials of the Richland Township Water Company and the officials of the Berwind-White Coal Mining Company, and the gravity of the situation pointed out.

Wherever practicable the patient was removed from his dwelling to the hospital, thus reducing the danger of secondary infection among other members of the family. At the suggestion of the Department's representatives, the Berwind-White Coal Mining Company had its employes disinfect with lime the premises in the village at

Eureka No. 40 where the typhoid fever cases had occurred. Lime was sprinkled plentifully throughout the entire village and a slight endeavor was made to improve the sanitary conditions here.

Permanent Protective Measures.

A new 4-inch main was installed near the village at Eureka No. 40, in order to permit water to be served from the Windber Water and Power Company where formerly water from the Little Paint Creek source of the Richland Township Water Company had been used.

On October 11th the three properties along the supply line from the Elton reservoir to Scalp Level were disconnected. On the same date the water disinfection plant at the reservoir was discontinued, since this supply was only being used for steaming purposes at the power plant and at the Pennsylvania Railroad plant at Paint Creek junction. Following the advice of the Department's representative the water company discontinued using Little Paint Creek as a source of public water supply because of the danger existing on the watershed above the intake.

At the time of this outbreak the borough of Scalp Level was without a board of health, but subsequently the Department representatives met with the council of this borough and succeeded in having a board of health appointed. Review of the situation was made and advice given to the council and the board of health relative to the necessary measures to be taken to handle the situation, as well as to erect safeguards against a repetition of such an outbreak.

SWISSVALE TYPHOID FEVER.

Swissvale is located in Allegheny County on the main line of the Pennsylvania railroad adjacent on the east to the fourteenth ward of the City of Pittsburgh. The town has a population of between 8,000 and 9,000, having increased from 1,716 in 1900. It is bounded on the north by the borough of Edgewood and Braddock Township, on the south by the borough of Rankin and the Monongahela River and on the east by the borough of North Braddock. Swissvale is well provided with sewerage facilities. It discharges a portion of its sewage through Nine Mile Run valley by means of outlets into the Edgewood borough system. Another portion of the borough sewers discharge into outlets of the Rankin borough system. The public water supply of Swissvale is furnished by the Pennsylvania Water Company, the supply being derived from the Allegheny River and filtered at a plant constructed under permits of this Department. This supply is also furnished in parts of the thirteenth and fourteenth wards of Pittsburgh; the boroughs of Wilkinsburg, Edgewood, North Braddock, East Pittsburgh, Turtle Creek, Wilmerding, Pitcairn, Chalfont and portions of the townships of Penn, Wilkins, Braddock, North Versailles and Patton, Allegheny County. The Pennsylvania Water Company also sells water to the borough of Rankin and the Trafford City Water Company which in turn supplies Trafford City. It is estimated that the population at present served with water by this company exceeds 100,000.

Typhoid Fever.

The records of typhoid fever cases in Swissvale during the years 1906 to 1915, inclusive, as reported by the borough authorities, are as follows:

Month.	05	06	07	08	09	10	11	12	13	14	15
January,	0	28	0	0	1	0	0	0	0	0	0
February,	0	11	0	2	1	1	0	0	0	0	1
March,	0	9	7	1	0	3	0	1	1	0	0
April,	0	22	4	2	0	0	0	3	0	0	0
May,	0	6	3	0	1	1	0	0	0	0	0
June,	0	0	0	0	0	0	0	0	0	0	0
July,	0	0	1	0	1	1	0	0	0	0	0
August,	0	3	5	3	1	0	0	1	0	0	14
September,	0	17	4	0	0	4	1	0	0	0	23
October,	0	13	8	0	2	3	0	0	1	30	7
November,	0	1	4	1	0	0	0	0	1	3	1
December,	0	12	6	0	3	0	1	0	1	2	0
Total,	0	116	42	9	10	13	2	5	4	35	46

The Department's investigation of the outbreak of 1915 covered 31 cases, although 44 were reported during the months of August, September and October. In the following tables are given the detail relative to these cases:

Onsets.	No. of Cases.	Onsets.	No. of Cases.
July 15	1	Aug. 21,	2
Aug. 11,	1	Aug. 22,	1
Aug. 12,	2	Aug. 23,	1
Aug. 13,	3	Aug. 24,	2
Aug. 14,	1	Aug. 26,	2
Aug. 15,	2	Aug. 28,	1
Aug. 17,	6	Aug. 30,	3
Aug. 19,	1	Sept. 2,	1
Aug. 20,	1	Total,	31

	Age and Sex.				Age and Sex.		
	Male.	Female.	Total.		Male.	Female.	Total.
0-4,		1	1	35-39,	4		4
5-9,	1	3	4	40-44,		2	2
10-14,	3	3	6	45-49,		1	1
15-19,	2	2	4	50-+,	1	1	2
20-24,		1	1				
25-29,	1		1				
30-34,	3	2	5		15	16	31

Occupations.	
School children (on vacation),	11
Housewives,	7
Children at home,	2
Adults at home,	2
Laborers, Union Switch & Signal Company,	2
Clerk, Union Switch & Signal Co.	1
Clerk, Duquesne Coal Docks,	1
Clerk, Edgar Thompson Steel Works,	1
Foreman, American Steel & Wire Company,	1
Foreman, Penna. Railroad Co.,	1
Street car conductor,	1
Grocer,	1
Total,	31

Water Used.	
Pennsylvania Water Company,	30
Pennsylvania Water Company and spring,	1
Total,	31

Ice Cream.	
None,	18
Stright's	8
Berry's,	2
Wentzel's,	1
Various,	2
Total,	31

Shell-fish.	
None,	30
Unknown supply,	1
Total,	31

Ice.	
None,	14
Pittsburgh Ice Co.,	11
Burns,	4
Weaver,	1
Daniels,	1
Total,	31

Uncooked Vegetables and Fruit.	
Various supplies,	20
Hucksters,	4
Miller's,	3
Locke's,	2
Grieeco,	1
Own garden,	1
Total,	31

Milk.	
Scott,	20
Scott & McAllister,	1
Scott & McJunkin,	1
Scott & Strong,	1
Hamilton (Scott's) & McAllister	1
McAllister & Cartabillalto,	1
McJunkin,	1
McJunkin & Miller,	1
McAllister,	1
Condensed,	3
Total,	31

In the following table are given the Department's typhoid morbidity records for the year 1915, in the boroughs supplied with water by the Pennsylvania Water Company and also the thirteenth and fourteenth wards of the city of Pittsburgh, parts of which also receive this supply:

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Year.
Braddock,	0	0	2	0	0	0	0	0	2	2	0	1	7
East Pittsburgh,	1	0	0	2	1	0	0	0	2	0	0	0	6
Edgewood,	0	0	0	0	0	0	0	0	1	0	0	0	1
North Braddock,	3	0	0	5	0	1	1	1	1	0	1	2	15
Pitcairn,	0	0	0	0	0	0	0	2	0	0	1	1	4
Pittsburgh:													
13th ward,	1	1	0	1	1	0	0	3	1	3	2	4	17
14th ward,	0	0	1	1	0	0	0	1	3	1	0	0	7
Rankin,	0	0	0	0	0	1	0	0	1	4	1	1	8
Swissvale,	0	1	0	0	0	0	0	14	23	7	1	0	46
Trafford,	0	0	0	0	2	0	0	0	0	0	0	1	3
Turtle Creek,	1	0	0	0	0	0	0	1	1	1	0	0	4
Wilkinsburg,	1	0	0	1	1	0	1	1	8	3	1	1	18
Wilmerding,	0	0	0	1	1	0	0	0	1	0	0	0	3
Total,	7	2	3	11	6	2	2	23	44	21	7	11	139

By referring to the above table it will be seen that the outbreak of August and September was practically confined to Swissdale, which has less than one tenth the population of the entire district supplied with this water. This fact justifies the elimination of the public water supply as not the transmissive agent responsible for the outbreak.

The cases were fairly well distributed throughout the borough and gave no cause for suspicion of neighborhood infection having occurred. Four cases occurred at one property, three cases at another, and there were three properties each having two cases. The remaining cases occurred singly. It appeared that three of the cases occurring in houses where previous cases were recorded were of secondary origin.

By referring to the table of milk supplies used by typhoid fever patients, it will be seen that 24 of the 31 cases had used Scott's supply, and the maximal number using any other one supply was 4. Mrs. Scott the wife of the dairyman was one of the cases having typhoid fever. The first received medical attention on August 30th, and the physician reported that her onset date was probably August 20th. Seventeen of the 31 cases had onsets antedating that of Mrs. Scott, so that if the date given for her onset is correct, it would appear that she was probably a victim rather than a primary source of infection in the outbreak. Mrs. Scott was removed to a local hospital on August 31st. Owing to the number of cases using Scott's milk the local board of health stopped the distribution of this supply on September 3rd.

A complete investigation was made relative to the production and handling of the supply. The analysis of specimens of stools and urine from the dairyman and employes handling the milk gave negative results. Relative to the employes at the dairy, one fact worthy of mention was disclosed. A man employed about a year had left the dairy on August 7th and entered the employ of a dairyman in Pittsburgh. When located on September 12th he was complaining of symptoms which gave rise to the suspicion that he might be succumbing to typhoid fever. On the strength of this possibility the dairy employing him in Pittsburgh was visited and directions given to properly disinfect all bottles and the equipment, including bottles

to be collected from the consumers, before resuming distribution of the supply. The City Department of Public Health was notified of the conditions and offered the services of an inspector to direct this work. A few days later the case of the employe ni question was definitely diagnosed as typhoid fever, justifying the preventive measures taken at the dairy upon learning of the evidence of suspicious symptoms.

It was discovered that milk bottles were removed to Scott's dairy from the residence of the first case in the group, having onset of July 15th until August 10th, This first case antedated the second case in the outbreak by about four weeks. Also bottles were removed to this dairy from a residence in Braddock Township, where a case having an onset date of July 28th was located, until the supply from the dairy was shut off on September 3rd.

Instructions were given the local board of health to properly disinfect the premises and all utensils at the Scott dairy before permitting the sale of milk therefrom to be resumed.

From a careful study of all the data secured during the investigation, it appeared logical to exclude all possible transmissive agents except milk as not causes of the outbreak. It appears probable that infection may have been introduced at the dairy through the agency of milk bottles removed from houses where early cases existed.

TYPHOID FEVER AT TRAUGER, MT. PLEASANT TOWNSHIP, WESTMORELAND COUNTY.

Trauger is a mining village of the H. C. Frick Coke Company, located in Mt. Pleasant Township in the south central portion of Westmoreland County. The population of about 700 live in company houses located on a hillside above the plant. Earth privy vaults are in use and wash water is largely discharged into street gutters. A trolley line of the West Penn Railways Company between Mt. Pleasant and Latrobe passes through a small settlement of about 150 or more people located about half a mile from the mining village. A branch of the Pennsylvania Railroad connects Trauger with Youngwood. The village is drained by a branch of Sewickley Creek, a tributary of the Monongahela River. The H. C. Frick Coke Company obtains its supply of water for industrial use from a branch of Sewickley Creek draining a watershed of about two square miles area on which there are 10 occupied properties. Water is collected in a reservoir having a capacity of about 11,000,000 gallons located in the village. This water is piped into 18 of the company's houses and is also available at 8 hydrants in the streets. The people have frequently been warned of the danger of using this water for other than inferior purposes, and as it is frequently turbid warm during the summer it is doubtful if it is used to any great extent for other than inferior purposes.

There are three springs in the village used for domestic supply and known as sources 1, 2 and 3. Source No. 1 is located on the hillside to the north of the village. The spring is enclosed in a brick masonry structure. About 300 feet or more from the spring at a higher elevation is located a storage tank to which water from the surface supply is pumped. The overflow from this tank drains down through a ditch a short distance from the spring and some of it may reach the spring by seepage. There are 2 concrete privy vaults located about 50 feet from the spring at an elevation of about 5 feet higher. Prior to July, 1915, these were earth vaults and it appears that seepage therefrom may have reached the spring. A 6-inch tile pipe conveys the water from the spring a short distance to a trough in the spring-house which is used for cooling milk by a nearby resident. The overflow from the trough is conveyed through a small pipe to an adjacent highway where the supply is obtained by six families.

Source No. 2 is a spring rising in one of the village streets. The spring is enclosed by a brick masonry structure. The water is piped outside. The greater number of the houses and earth privy vaults of the village are located above the spring. The supply is used by most of the families in the village.

Source No. 3 is located on the opposite side of the street from source No. 2 with the same general surroundings, but is not as extensively used as source No. 2.

All of these springs became turbid after rains, indicating that surface drainage reaches the supplies. There are 4 springs located about one-fourth to one-half mile from the mining village. They are used by a population of probably 150 or more in the settlement along the trolley line of the West Penn Railways Company. These springs are more or less subject to surface drainage and may receive seepage from privy vaults located on the drainage areas above them.

Prior to the investigation the H. C. Frick Coke Company had warned the people of the village to boil all water used for domestic purposes and had installed apparatus at the three springs in the mining village and at two of the springs in the settlement along the trolley line to treat the waters wih hypochlorite of lime. The chemical in each case was mixed and placed in an earthenware jar provided

with a spigot from which the solution dripped into the water. The apparatus was placed within the spring enclosure so that all water might be treated before entering the outlet pipe and becoming available for public use.

It is reported that prior to this outbreak the village had been remarkably free from typhoid fever. At the time of the investigation nine cases had occurred having onset dates between August 7th and September 17th. Two of the cases which occurred in houses with previous cases were probably of secondary origin. From a careful census of the cases it appeared logical to eliminate all transmissive agents except water as a probable cause of the outbreak. All of the cases had used water from source No. 2 and all but 2 had used this supply exclusively.

It is reported that the results of bacteriological analysses of the three springs in the mining village made in the company's laboratories had frequently indicated sewage contamination, and upon this evidence the company had instituted the disinfection of the supplies. The results of analyses of samples of the treated water collected from these supplies at the time of the investigation gave low total counts and were found B. coli. Owing to the comparatively small flows from the springs the efficient application of the hypochlorite of lime solution was difficult, and instructions were given to materially increase the rate of dosage to assure sufficient disinfection. Subsequently it appeared that the practice of carrying drinking water from the springs in the same buckets used for carrying the surface supply for inferior purposes might be a possible source of transmitting the infection, and the company was notified of the advisability of disinfecting the surface supply, and this treatment was promptly instituted.

The company provided a nurse to visit the houses where typhoid fever occurred to give instructions relative to the care of the patients and proper disinfection. Unslacked lime supplied by the company was sprinkled wherever advisable throughout the village.

The urgent advisability of taking steps to secure a safe water supply and the need of continuing the disinfection of the existing supplies until a satisfactory substitute should be obtaned was brought to the attention of the company.

TYPHOID FEVER OUTBREAK AT VILLA MARIA ACADEMY AT WEST CHESTER.

West Chester is in the eastern part of Chester County. It is the county seat and a rich farming and dairying center and has a population of 14,000. There are a few manufactories and a State normal school and also the Villa Maria Convent and Academy. The latter is situated in the northern part of the borough and houses 25 sisters, 49 novices and 29 postulates, young girls in the first grade of preparation for the sisterhood, 103 women and girls in all, and also 66 boys, all residing in the main building. There is a power plant and bakery.

Municipal Water Works.

There is a municipally owned water works serving nearly the entire population of the borough and practically no individual water supplies remain.

The borough water supply is drawn from Chester Creek at two pumping stations. The upper one, erected in 1854, is situated along the creek about two miles below its source and furnishes the regular supply. The other station was constructed in 1898 three miles down-stream and is used when the supply is insufficient at the upper station. The lower station had not been used during the current season up to October 20. There is no purification of the water except that provided by sedimentation in basins. Moreover, on April 12, 1915, as a precautionary measure, an apparatus for germicidal treatment with chlorinated lime was installed in the pumping station by a Department representative, but it was continued in operation by the borough for only about three months.

On October 7th, following a report from the local board of health that an analysis of the water supply had indicated the presence of sewage organisms, a representative from the State Health Department installed a chlorinated lime germicide apparatus at the Fernhill pumping station. The Milltown station was not in operation at the time and no apparatus was installed there, but instructions were given to install a similar apparatus at once and hold it in readiness for immediate use whenever the pumps at this station were operated. The water in the reservoir was treated with copper sulphate and the distributing system was thoroughly flushed out with the chemically treated water. The borough officials were instructed to continue the chemical treatment of the water until they were advised otherwise by the Department.

The Department has never approved the water works, but on the other hand has called upon West Chester repeatedly to provide a safe, public water supply. The drainage areas are inhabited to such an extent that pollution of the streams is inevitable. The Department has made repeated inspections of the properties above the intakes and has ordered the abatement of pollutions in order to reduce the danger to a minimum.

The Villa Maria Convent and Academy are furnished with water by the municipal water works.

Sewerage.

A public system of sanitary sewers extends throughout the greater portion of the borough, which is on high ground some distance from any large stream. The sewage is conveyed to two treatment works, one to the northwest on Taylor Run, a tributary of Brandywine Creek, and the other to the southeast on Goose Creek, a tributary of Chester Creek. The sewerage system and sewage treatment plants have been constructed in accordance with plans approved by this Department. The treatment plants comprise settling tanks, sprinkling filters, chemical germicide apparatus and re-settling basins.

There are no public sewers in the vicinity of the Villa Maria Convent and Academy. The sewage from the institution is put into cesspools close to a small tributary of Taylor Run, which heads in this part of the borough. Some 50 houses dispose of kitchen waste and wash water into street gutters tributary to this run and there are other cesspools in this area besides those of the convent.

VILLA MARIA ACADEMY.

About 1,000 feet west of the main building of the Villa Maria Convent and Academy and beyond Boot Road is the caretaker's house. Near it is a spring issuing from the foot of the hillside and close to the small stream above mentioned. The location of this spring makes it a dangerous source of supply, and the results of bacteriological examinations by the Department laboratories of a sample collected from it revealed the presence of sewage organisms.

The playground of the institution, maintained for the boys, is located on a plot of land in a fork formed by Boot Road and Franklin Street south of the caretaker's house. Games of all kinds are played here, including baseball, tennis, hockey, etc. At the upper end of the field at Boot Road, a 6-inch sewer from the Chester County Hospital discharges into another branch of the run above mentioned. This stream flows through the playground. The hospital sewer receives the wash water from the laundry, operating room and baths. The sewage from the closets at the institution is discharged into cesspools and the overflow is onto a plowed field which is on sloping land to the run. The linen at the hospital is sterilized with steam and it is reported that the soiled linen of the typhoid fever patients is treated with a chemical solution consisting principally of formaldehyde. No attempt is made to chemically treat the waste water from the operating room or water from the baths.

There is a watercress pond about three-quarters of a mile north of the convent in West Goshen Township. The pond is on a tributary of Taylor Run, which has its source about three-quarters of a mile above and on which there are four habitations. At one of these there was found a pollution by laundry waste. It was reported that no typhoid had occurred among the members of the family or visitors to the premises. The tracks of the Pennsylvania Railroad cross one of the branches of the stream. Cultivated tracts of the Hoops Brothers and Thomas Nursery Company are within the drainage area and are worked by upwards of 50 men, the personnel of whom is continually changing. So far as could be ascertained, none of those employed by the company had been ill with typhoid fever. No sanitary conveniences for the employes in outlying parts of the nursery are provided by this company. The results of bacteriological examinations of samples of water collected from the cress pond at the time of the Department's investigation do not give evidence of sewage contamination.

Milk for the institution is obtained partly from its own dairy and partly from James Hickey, of West Chester. Mr. Hickey obtains milk from Charles Thompson and George Pollock. Mr. Hickey supplies a large number of customers in the borough and also the Darlington Seminary, having upward of 300 pupils, none of whom were ill with typhoid fever at the time of the investigation. No cases were known to exist on Mr. Hickey's milk route in the borough. Investigation at the dairy and at the sources from which milk was obtained disclosed no history of typhoid fever.

The Villa Maria Convent raises its own vegetables and obtains its fruit from local dealers who supply general trade in West Chester. Some peaches were obtained from outside the borough. They were used in common by everyone in the institution. All bread used is baked at the institution, the baker being regularly and continuously employed.

The food and dishes of the entire institution were handled very largely by practically all the members of the class postulates, the entering class of girls.

Typhoid Fever.

As far as could be ascertained there had not been any typhoid fever among the occupants of the Villa Maria Convent for some time prior to the epidemic discussed below. Several years ago the members of the present baker's family were ill of the disease and its origin was traced to contaminated well water at the baker's dwelling. This well has long since been abandoned. Between September 27 and October 12, 1915, there were 21 cases of the disease occurring among the boys at the academy of the institution and two suspect cases among the sisters.

During the months of September and October, Dr. Scattergood, county medical inspector, ascertained that there were only three cases of typhoid fever in the borough of West Chester and these were very likely imported.

Pertinent facts relative to the typhoid fever cases of the 21 boys at the Villa Maria Academy are given below:

Name.	Address.	Age.	Date of Arrival.	Onset.	Room.	Table.
Thomas Dore,	Lebanon, Pa.,	7	July	Sept. 27	6	5
Bartholomew Soden,	Bronx, N. Y.,	13	Sept. 6	Oct. 5	1	1
Richard Grammache,	Lancaster, Pa.,	11	Sept. 6	Oct. 5	3	2
James Evans,	Moorestown, N. J.,	12	Sept. 6	Oct. 5	2	3
John O'Neil,	Philadelphia, Pa.,	9	Sept. 6	Oct. 5	6	5
John McManemin,	Atlantic City, N. J.,	10	Sept. 6	Oct. 5	3	3
Wm. Kennedy,	Chadds Ford, Pa.,	11	Sept. 6	Oct. 6	6	3
Francis Millan,	Lafayette, Pa.,	11	Sept. 6	Oct. 6	1	1
Jos. McNichol,	W. Philadelphia, Pa.	10	Sept. 6	Oct. 6	4	5
Jos. Messersmith,	W. Philadelphia, Pa.	11	Sept. 6	Oct. 6	3	5
Wm. Millan,	Lafayette, Pa.,	9	Sept. 6	Oct. 6	5	5
Leonard Morris,	Morris Ranch, Wyo.	11	July	Oct. 8	3	4
Jos. Murphy,	S. Philadelphia, Pa.	9	Sept. 6	Oct. 8	4	4
John Claffey,	N. Philadelphia, Pa.	10	Sept. 6	Oct. 9	4	3
Francis Grammache,	Lancaster, Pa.,	9	Sept. 6	Oct. 9	7	5
Wm. Donnelly,	W. Philadelphia, Pa.	11	Sept. 6	Oct. 9	5	3
John Millan,	Lafayette, Pa.,	7	Sept. 6	Oct. 10	7	5
John Mullen,	S. Philadelphia, Pa.,	10	Sept. 6	Oct. 10	3	5
John Molyneaux,	Philadelphia, Pa.,	11	Sept. 6	Oct. 12	2	3
Daniel Gartin,	Norristown, Pa.,	14	Sept. 6	Oct. 10	1	1
John Riley,	S. Philadelphia, Pa.	14	Sept. 6	Oct. 10	1	1

Water from the spring at the caretaker's home had been drunk by five of the boys of the academy. Presumably all of the boys drank West Chester public supply, used regularly at the institution.

Watercress from the pond in West Goshen Township north of the institution was used by twelve of the boys of the academy, and perhaps by seven others, of whom five could not remember definitely and two were delirious at the time of the investigation. The other two boys of the 21 could not state definitely that they had not drunk from the stream at the cress beds. The cress was eaten on September 23rd while the boys were not on a "hike."

Ice cream was eaten by all the boys on September 12th and September 20th. It was obtained from F. A. Wauldbuesser, a local dealer in West Chester, who conducts the largest ice cream business in the borough and manufactured between 200 and 300 quarts daily during September.

All other foods were used in common by all of the people at the convent and academy and are, therefore, not to be suspected, since the typhoid was restricted to the boys.

The handling by the boys of baseballs, etc., which had fallen into and been recovered from the sewage stream from the hospital flowing through the playgrounds is considered a most plausible source of the typhoid fever infection among the boys. An unconforming circumstance was the occurrence of all of the cases in a group. There was hardly any time during the summer when there was not a typhoid fever case at the hospital.

The watercress is also a very plausible source of the typhoid fever infection, even if it was not the cause of all the cases. Just about the proper period for incubation elapsed between the eating of the watercress and the onsents of most of the cases.

The first case appearing at the institution was in the person of Thomas Dore, a resident of Lebanon, aged 7, who arrived the first week of July. This child was

sent to a Philadelphia hospital, and from information obtained from the resident physician, examinations of blood and stools did not give positive results, and further symptoms developed much doubt whether the case was typhoid fever.

Some of the other questionable circumstances described may have been contributing factors in the epidemic.

Dr. Joseph Scattergood, county medical inspector, obtained specimens for Widal examinations in the Department laboratories from practically all of the people in the Villa Maria Convent, especially from those having to do with the food or otherwise coming in contact with the boys, and the findings will be included in a medical report.

The authorities of the Villa Maria Convent and Academy were advised to do away with the spring at the caretaker's house. The extension of the municipal sewer system in the vicinity of the convent is to be expected in the near future. The matter of providing for a more sanitary disposal of the sewage at the Chester County Hospital was taken up with the superintendent.

TYPHOID FEVER OUTBREAK IN YORK, NORTH YORK AND WEST YORK.

The City of York, population 50,000, is the county seat of York County and an important manufacturing center, in which varied industries are located. The borough of North York, population 2,270, and the borough of West York, population 2,700, adjoin the city on the north and west respectively and are principally residential districts. The three municipalities comprise essentially one community.

Public Water Supply.

The York Water Company supplies York, North York, West York and parts of the surrounding townships, the number of consumers in the district being about 40,000. The supply is obtained from a large impounding reservoir on Codorus Creek. Water is pumped from here to sedimentation basins and a filter plant on an elevation south of the city. Under normal operating conditions there is a subsidence period of nine days before filtration.

Provision is made for applying alum as a coagulant at times when the turbidity of the raw water is high. At times when the turbidity is very high the pumps are stopped and stored water is drawn from the sedimentation basins.

A by-pass arrangement exists whereby settled water can be passed around the filters into the distributing system. At the pump station a chemical germicide apparatus is installed for the treatment of all water pumped from the creek.

A laboratory is maintained at the filter plant where bacteriological and chemical analyses are made at least three times each week. The filter plant is in charge of careful and competent operators and on the whole delivers water of a very satisfactory quality.

A regular annual test of the operation of the filter plant was made beginning September 14, 1915, by Mr. James M. Caird, of Troy, N. Y., who is consulting engineer for the York Water Company. It extended over a period of six days. Ninety samples of filtered water were collected during this test, none of which showed the presence of B. coli. Thirty-three samples of water collected from the distributing system and analyzed in the laboratories of the State Department of Health gave low bacterial total counts and none showed the presence of B. coli.

Sewerage.

The City of York is pretty extensively sewered. No sewerage facilities are provided for the adjoining municipalities. The city is engaged n the construction of intercepting sewers and sewage treatment works in which the sewage will be modified and disinfected before being discharged into the Codorus Creek. The collecting sewers and sewage treatment plant have been approved in permits issued by the State Department of Health.

Previous Typhoid Fever.

The number of cases of typhoid fever reported from York, North York and West York are shown in the following table:

	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915
York,	8	79	91	50	83	69	73	38	67	82	143
North York,	------	1	1	2	3	3	5	1	0	6	17
West York,	------	------	1	1	3	1	3	4	6	1	5
Total,	8	80	93	53	89	73	81	43	73	89	165

The cases reported by months during 1915 are shown in the following table:

	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
York,	3	3	3	3	4	15	10	12	16	59	5	10	143
North York,	1	------	------	------	------	------	------	------	3	11	1	1	17
West York,	------	------	1	------	------	------	------	------	------	2	1	1	5
Total,	4	3	4	3	4	15	10	12	19	72	7	12	165

TYPHOID FEVER IN 1915.

The ninety cases occurring during the outbreak in 1915 were investigated by the Department's officers and the information collected is the basis for the following tables:

ONSETS.

Day.	Cases.					Day.	Cases.				
	June.	July.	August.	September.	October.		June.	July.	August.	September.	October.
1,	------	------	------	2	4	18,	------	------	------	1	------
2,	------	------	------	------	3	19,	------	------	------	1	------
3,	------	------	------	------	4	20,	------	------	------	4	1
4,	------	------	1	1	2	21,	------	------	------	------	------
5,	------	------	------	1	2	22,	1	------	1	6	------
6,	------	------	------	1	4	23,	------	------	------	8	------
7,	------	------	------	1	1	24,	------	------	------	2	------
8,	------	------	------	------	------	25,	------	------	1	3	------
9,	------	------	------	------	1	26,	------	------	------	4	------
10,	------	------	------	------	2	27,	------	------	------	1	------
11,	------	------	------	1	------	28,	------	------	------	4	------
12,	------	------	------	1	1	29,	------	------	------	1	------
13,	------	------	1	1	1	30,	------	------	1	5	------
14,	------	------	------	------	------	31,	------	1	1	------	------
15,	------	------	------	1	1						
16,	------	------	------	2	------						
17,	------	------	------	3	------	Total,	1	1	6	55	27

AGE AND SEX AND DISTRIBUTION.

Age.	Male.	Female.	Total.	Per cent.	Age.	Male.	Female.	Total.	Per cent.
0-4,	2	0	2	2.2	45-49,	2	1	3	3.3
5-9,	3	6	9	10.0	50-54,	1	0	1	1.1
10-14,	10	9	19	21.1	55-59,	1	0	1	1.1
15-19,	9	9	18	20.0	60-64,	0	0	0	0.0
20-24,	6	6	12	13.4	65-69,	0	1	1	1.1
25-29,	8	3	11	12.2	70-75,	1	0	1	1.1
30-34,	0	5	5	5.6					
35-39,	4	2	6	6.7					
40-44,	0	1	1	1.1	Total,	47	43	90	100.0

CASES AS TO OCCUPATION OR PLACE OF EMPLOYMENT.

York Public School (Garfield)	3
York Public School (Jackson)	3
York Public School (Pine St.)	2
York Public School (Princess St.)	1
York Public School (Arch St.)	1
York Public School (Duke St.)	1
York Public School (Stephens)	1
York Public School (Smallwood)	1
York Public School (Madison Ave.)	1
York Public School (King St.)	1
York High School (New)	4
York High School (Old)	2
York Collegiate Institute	1
North York Public School	3
North York High School	1
West York Public School	1
Housewife	13
At home	4
Cigarmaker,	3
Candymaker	3
Clerk	3
Laborer	2
Carpenter	2
York Dental Supply Co.	2
Diamond Silk Mill	3
Levy Bros. Ribbon Factory	2
Jacob Kopp Knitting Mills	1
York Silk Mill	1
Black Hosiery Co.	1
Monarch Silk Mill	1
Butcher	1
Quarryman	1
Chauffeur	1
Wheelwright	1
Bookkeeper,	1
Carriage-builder	1
Cook	1
Theatrical chaperon	1
Office boy	1
Woodworker	1
Restaurant keeper	1
Moulder	1
Stenographer	1
Miliner	1
Laundress	1
Circus actor	1
Bakery driver	1
Janitor	1
Machinist	1
Drayman	1
Paper mill foreman	1
Watchmaker	1

Geographical Distribution.

The cases were distributed quite generally throughout the York district. The intensity of the outbreak corresponding with the density of population, except in West York where only two cases occurred.

Water Supply.

Public	Private	Pub. and Priv.
63	1	89

ICE CREAM

Dealers.	No. of Cases.
H. L. Neuman	27
H. L. Neuman and Purity.	27
H. L. Neuman and Bierman	5
Purity and others	4
H. L. Neuman and others	3
H. L. Neuman, Purity and Bierman	3
Purity	2
H. L. Neuman and Emig	1
Bierman and Purity	1
H. L. Neuman, Lippes and Purity	1
Emig and others	1
H. L. Neuman, Emig and Purity	1
H. L. Neuman, Purity and others	1
Alex. Neuman and others	1
H. L. Neuman and Alex. Neuman	1
Various	6
Unstated	3
Various out of town	2
Total	90

ICE

Dealers.	No. of Cases.
None	23
Harry Neuman	14
Everhart	6
Wilhelm	5
Deardorf	4
Chronister	3
Feldman	3
Warner	3
Brenneman	3
Crystal	3
Fuller	2
Shriver	2
York Cold Storage Company	2
Senft	2
Schrumm	2
Shellenberger	1
Bentzel	1
Shenberger	1
Smith	1
Feiser	1
Foose & Bierman	1
Unknown	3
Unstated	4
Total	90

MILK SUPPLY.

Dealers.	No. of Cases.
York Sanitary Milk Co.	43
Gladfelter	3
Martin	2
Goughanour	2
Billett	2
Heiser	1
Kraft	1
Shellenberger	1
Myers	1
Henry	1
Dietz	1
Shuman	1
Bupp	1
Klinefelter	1
Berry	1
Heiser and Forrey	2
Martin and York Sanitary	2
Gladfelter and others	2
Berry and York Sanitary	1
Henry, Hershey and Gerber	1
Gerber Dietz and others	1
Goughanour and York Sanitary	1
Graff and York Sanitary	1
Kraft, Gerber and York Sanitary	1
Quickel and York Sanitary	1

MILK SUPPLY—Continued.

Dealers.	No. of Cases.
Miller and Hills	1
Forrey and York Sanitary	1
Martin and Becker	1
Kraft and York Sanitary	1
Klindedinst and York Sanitary	1
Yates and Neater	1
Klinefelter and York Sanitary	1
Gerber and others	1
Hamberger and York Sanitary	1
Graff, Fuller and York Sanitary	1
Kraft, Fuller and York Sanitary	1
Ness and at Goldsboro	1
Unstated	2
Various out of town	1
Total	90

The use of bread, uncooked vegetables and fruits was investigated, but the data obtained showed clearly that these foods could not have been the medium of infection. Because the city has a comprehensive sewerage system and because garbage is collected regularly, flies probably played little or no part in the spread of the infection.

In five instances the infection may have been due to contact with other typhoid fever patients.

The York Sanitary Milk Company supplied about 9,000 quarts of milk daily, serving at least 39,000 people or 71 per cent. of the urban and suburban population in the York district. Nevertheless, only 62.2 per cent. of the total number of cases occurred among persons supplied exclusively or in part by this milk.

An examination of the company's plant showed that the milk was pasteurized and handled in a clean and careful manner. No record of recent illness among the company's 48 employes was found. The records and investigations of the county medical inspector failed to show any suspicion of typhoid fever on any of the dairy farms supplying milk to the company.

The York Sanitary Milk Company distributes also about 240 quarts daily of special quality milk which is bottled, without being pasteurized, on the Gladfelter farm at Spring Grove. This supply is entirely independent of the company's other supply. Only five cases of fever occurred among people supplied with this milk, although eighty families received it regularly and others received it at times.

Of the ninety cases investigated, in seventy instances ice cream manufactured by H. L. Neuman was used, and in twelve additional instances it was probably used. Because of this fact, a thorough investigation was made of the source of milk and cream supplied to the H. L. Neuman manufactory and also of the methods used in the manufacture of this ice cream.

At this plant from 400 to 2,100 gallons are manufactured per day. Ice cream is supplied to 225 wholesale customers in York, North and West York and to about 100 in the territory adjacent to the city. Milk is supplied regularly to this ice cream factory from 21 dairy farms in York County and occasionally by 8 dairymen in York. During the summer season milk and cream are purchased from any person who may have it for sale. No record is kept of the source of such occasional cash purchases. The firm required that a report be filed monthly by each of the dairymen supplying milk or cream, giving information as to any illness of persons on the dairy farms or among those who had anything at all to do with the handling of the milk. Investigations by the county medical inspector failed to reveal any cases of typhoid fever on dairy farms supplying H. L. Neuman.

The process of manufacture of ice cream at the Neuman plant is similar to that in most modern ice cream factories. The cans of milk are weighed and the contents then delivered to a large storage tank. From this tank the milk is delivered to a pasteurizing tank where it is corrected for butter fat and then pasteurized by the holding system at 155° F. for 15 minutes. At the time of inspection the pasteurizing machine was operating satisfactorily, but it is known that the machine had been operated previously without a thermometer, that instrument having been broken, and the temperature controlled by guess. From the pasteurizing tank the milk is delivered to a compresser which is said to improve it for ice cream manufacture by breaking up the cells and fat globules. The milk is then passed through a cooler and thence to the mixers where sugar, flavoring and other ingredients are added. From this container the mixture flows down through refrigerating compartments where it is rapidly agitated and beaten, and it finally flows, in a semi-hardened condition, into cans held under the delivery spouts. The cans are then covered and placed in a refrigerating room where the ice cream sets to the desired hardness. Each can is marked with a tag showing the date of manufacture.

The ice cream is mixed in batches of about 400 gallons and for this quantity about 200 gallons of milk is required. Milk is pasteurized in batches of about 200 gallons each.

All ice cream cans are washed first in hot water, then in a solution of washing soda and finally rinsed in cold water. Cylinder cans are then subjected to a live steam bath until too hot to be touched with the hands, while long cans for brick ice cream are placed on racks over steam pipes to be heated and dried. All parts of machinery with which milk comes in contact are washed out with hot water each day. There are only seven men employed in the H. L. Neuman plant to handle all the ingredients of the product from the time they enter the building until the ice cream is prepared for delivery. Each of these men was personally interviewed and none presented a personal history of typhoid fever nor a history of recent illness of self or members of family for several months.

The York Sanitary Milk Company also is engaged in the manufacture of a brand of ice cream, known as "Purity." Over 400 gallons of ice cream are manufactured daily. The ice cream factory was found to be equipped with modern apparatus, the milk carefully pasteurized and containers sterilized. None of those engaged in manufacturing or handling "Purity" ice cream presented a history of typhoid fever or any other recent illness. By only 40 typhoid fever patients had "Purity" ice cream been used exclusively or in part as compared with 70 instances in which H. L. Neuman ice cream had been used. In two instances "Purity" ice cream had been used exclusively as compared with 27 instances in which Neuman's ice cream had been used exclusively.

The largest ice dealer was found to be Harry Neuman, 14 of whose customers developed typhoid fever. The Neuman ice business is not connected with H. L. Neuman, the manufacturer of ice cream.

Discussion.

The investigation indicated that the infection was spread by means of the public water supply or ice cream manufactured by H. L. Neuman.

Furthermore, it appeared that there was no reasonable ground for attributing the infection to the public water supply, since the filtration plant was operating effectively during the time that the infection occurred as attested by a six days' efficiency test conducted at a time when it was not realized that typhoid fever was epidemic in the York district. Numerous analyses made by the State Department of Health and by other laboratories for the water company failed to show the presence of sewage contamination in a single instance in the water supplied to the public.

Investigation made by County Medical Inspector J. S. Miller of a great number of cases of typhoid fever occurring in the rural sections of York County from August 26 to September 11, 1915, showed that in practically all instances ice cream manufactured by H. L. Neuman had been used a short time before illness. Investigation also showed that in the rural districts where typhoid fever was prevalent H. L. Neuman's ice cream had been served at picnics held in the districts, and, furthermore, that in those sections of the county free from typhoid in epidemic form no such ice cream had been used. The findings were so clear that the county medical inspector did not hesitate to attribute the rural typhoid fever to the ice cream manufactured by H. L. Neuman.

The high proportion of cases between the ages of five and thirty years may also be considered as evidence that ice cream was instrumental in conveying the infection.

At the ice cream factory during the height of the season quantities of milk in excess of the normal capacity of the plant had to be pasteurized. Portions of this milk supply were obtained from miscellaneous sources of which no record was kept. It is known that during a portion of the season the apparatus for pasteurizing the milk was operated without the use of the very essential thermometer. The long-continued period of infection may be accounted for by the fact that ice cream was kept in the refrigeration room as long as 13 days at a time. Quantities of cream intended for sale at picnics if unsold were returned to the refrigerating room and distributed from there for local consumption.

Remedial Measures.

Although it was not believed that the water supply was responsible for the presence of typhoid fever in the district, it was deemed advisable as an additional precaution to treat the filtered water with a germicide. Accordingly the water company, acting on the advice of the State Department of Health, installed two temporary chlorinated lime disinfecting apparatus applying the germicide to the main effluent from each of the two batteries of filters. Two pounds of chlorinated lime per million gallons of filtered water were introduced. Even at this low rate a slight taste in the water was at times noticeable. At the suggestion of the county medical inspector special precautionary measures were adopted at the H. L. Neuman ice cream factory.

VI. REFERENCES TO SPECIAL COUNSEL.

During the year 1915, fifty-two cases were referred to Department attorneys in thirteen counties of the State, by officers of the Department, at the direction of the Commissioner of Health, but only where the Department had been unable to secure abatements after repeated inspections and interviews with the owners or occupants of the properties.

In addition to writing a letter in each case to the owner or occupant in question, calling attention to the complaint of the Department and to the law governing the case, and suggesting the advisability of complying with the request of the Department, in order that they might save themselves the trouble and expense of litigation, counsel for the Department, in most instances, made personal inspection of the premises and held interviews.

When the defendant persisted in his refusal to abate after letter and interview, prosecutions were promptly begun in all casses where the evidence of pollution was sufficient to justify such procedure.

The primary object of the proceedings has been to secure abatements. For this reason, the defendant was given the opportunity of disposing of his case at any stage of the proceedings by making a permanent abatement and paying the costs.

Of the nine instances wherein information was made and hearings held during the year, four were closed by abatement and payment of costs before the return of the cases to the quarter sessions court; three were pending at the end of the year and two were closed by court trials.

Of the cases referred during the year, thirty-seven were closed, fifteen remaining open January 1, 1916.

Thirty-three cases which had been referred previous to January 1, 1915, were reported closed during the year, making a total of seventy cases closed during 1915.

County.	Attorney.	Cases referred previous to 1915, closed 1915.	Cases referred 1915.	Cases referred 1915, closed 1915.	Cases referred 1915, pending January 1, 1916.
Allegheny,	Watson & Freeman,	0	1	0	1
Berks,	Williams & Sinkler,	7	29	22	7
Bradford,	B. F. Kuykendell, Jr.,	0	2	2	0
Bucks,	Williams & Sinkler,	1	0	0	0
Centre,	Henry C. Quigley,	1	0	0	0
Chester,	Williams & Sinkler,	7	8	6	2
Dauphin,	Michael E. Stroup,	2	0	0	0
Delaware,	Williams & Sinkler,	1	0	0	0
Elk,	Joseph L. Flynn,	0	1	0	1
Lackawanna,	Edwin C. Ammerman,	0	1	0	1
Lehigh,	James M. Marsteller,	4	1	1	0
Lycoming,	Allen & Reading,	0	2	1	1
Mercer,	James M. Campbell,	2	0	0	0
Mifflin,	Rufus Elder,	0	1	0	1
Monroe,	W. A. Erdman,	3	2	2	0
Montgomery,	Williams &Sinkler,	7	8	6	2
Northampton,	Maxwell & Kirkpatrick,	1	1	1	0
Schuylkill,	John T. Whalen,	1	0	0	0
Tioga,	Merrick Young,	0	2	2	0
York,	George Hay Kain,	0	1	0	1
Total,		33	52	37	15

CASES REFERRED PREVIOUS TO JANUARY 1, 1915.—CLOSED DURING 1915.

Berks County.

Case of Peter Ruth, North Heidelburg township, pollution of a tributary to Schuylkill river. Reported closed May 6th, without litigation.

Case of John Barbey, Harry M. Focht, tenant, Birdsboro borough, pollution of a tributary to Schuylkill river. Information made before Alderman Webber, of Reading, March 30th. Hearing April 5th, closed September 3rd, by the abatement of the pollution and payment of costs.

Case of Anna Hoffman, Hereford township, pollution of Perkiomen creek. Reported closed May 6th, without litigation.

Case of The Prospect Dye Company, Muhlenburg township, charged with maintaining a nuisance caused by dye wastes. Closed without litigation May 6th.

Case of Jefferson C. Snyder, Albany township, pollution of Maiden creek. Reported closed without litigation July 14th.

Case of E. B. Seaman, Tilden township, pollution of a tributary to Schuylkill river. Reported closed without litigation July 8th.

Case of Robert Walter, Lower Heidelburg township, pollution of a tributary to Tulpehocken creek. Case continued from December, 1914, term of quarter sessions court. Reported closed by the abatement of the pollution and payment of costs October 25th.

Bucks County.

Case of Joseph Hunsberger, Perkasie borough, pollution of Perkiomen creek. Case continued from December, 1914, term of quarter sessions court. Reported closed by abatement of pollution December 30th.

Centre County.

Case of Harry Lutz, Spring township, pollution of Spring creek. Reported closed without litigation March 30th.

Chester County.

Case of Henry C. Baldwin, West Goshen township, pollution of Chester creek. Reported closed without litigation July 26th.

Case of Megargee Paper Mills Company, East Fallowfield township, pollution of West Brandywine creek. Reported closed without litigation December 31st.

Case of George Coulter, West Pikeland township, pollution of Pickering creek. Reported closed by the abatement of the pollution and payment of costs April 5th.

Case of Aaron Rennard, East Goshen township, pollution of Chester creek. Reported closed without litigation February 15th.

Case of W. H. Yearsley, West Goshen township, pollution of a tributary to Chester creek. Information made January 16th, before Justice of the Peace R. Jones Patrick, of West Chester. Hearing January 23rd, between attorneys. Reported closed July 22nd, by abatement and payment of costs.

Case of John Y. Woodward, East Fallowfield township, pollution of West Brandywine creek. Reported closed April 7th, without litigation.

Case of B. F. Pierce, Kennett township, pollution of Red Clay creek. Information was made April 16th, before Justice of the Peace R. Jones Patrick at West Chester. Hearing held April 19th. Defendant held for April Term of quarter sessions court. April 28th, the grand jury found a true bill, but owing to the crowded condition of the lists, the case was continued until the October term of quarter sessions. On October 4th, the defendant entered a plea of guilty and sentence was suspended to permit him to complete the abatement of the nuisance. Reported closed December 4th, by abatement and payment of costs.

Dauphin County.

Case of Jacob Gingrich, owner, Addison Gingrich, tenant, East Hanover township, pollution of Swatara creek above the intake at Hummelstown. Reported abated March 2nd, without litigation.

Case of L. B. Lehman, Halifax township, pollution of Etzweiler run used as a supply by the Halifax Water Company. Reported closed March 3rd, without litigation.

Delaware County.

Case of Mary Agnew, owner, James Wharton, tenant, Newtown township, pollution of Crum creek above the intake of the Springfield Water Company. Reported closed June 28th, by abatement.

Lehigh County.

Case of Charles Ebert, owner, Alfred Ebert, tenant, Lynn township, pollution of a tributary to Maiden creek above Reading City intake. Reported closed March 18th, without litigation.

Case of Henry F. Kistler, owner, J. D. Long, tenant, Lynn township, pollution of a tributary to Maiden creek above the Reading City intake. Reported closed March 19th, without litigation.

Case of Charles Schaeffer, Lynn township, pollution of a tributary to Maiden creek above the Reading City intake. Reported closed May 6th, without litigation.

Case of William Lauchnor, Lynn township, pollution of a tributary to Maiden creek above the Reading City intake. Reported closed August 18th, without litigation.

Mercer County.

Case of Phillip Snyder, Pymatuning township, pollution of Shenango river. Reported closed July 26th, without litigation.

Case of John Pen, Findley township, pollution of Shenango river. Reported closed September 11th, without litigation.

Monroe County.

Case of Mrs. Joseph Faulke, Stroud township, pollution of McMichael creek. Reported closed January 13th, without litigation.

Case of S. M. Lameroux, Hamilton township, pollution of McMichael creek. Reported closed June 4th, without litigation.

Case of Stephen Hilderpsof, pollution of Cherry creek. Reported closed May 7th, without litigation.

Montgomery County.

Case of Garrett Brownback, Limerick township, pollution of a tributary to Schuylkill river. Reported closed May 6th, without litigation.

Case of C. C. Moore, Hatboro borough, pollution of Pennypack creek above the Moreland Springs Water Company intake. Reported closed May 14th, without litigation.

Case of C. J. Kemmerer, Ambler borough, charged with interference with an officer in the performance of his duty. On March 3rd the grand jury found a true bill in this case, but owing to the crowded court list the case was continued until the June term of quarter sessions court. On June 5th the defendant plead guilty and was sentenced to pay a fine of twenty-five dollars and the costs of the prosecution.

Northampton County.

Case of Harry Reese, owner, Charles Graber, tenant, East Allen township, pollution of a tributary of Catassauqua creek. Reported closed January 6th, without litigation.

Schuylkill County.

Case of Frank Brown, owner. George Rubright, tenant, Frackville borough, pollution of a tributary to Little Mahanoy creek above the Ashland Water Company intake. Reported closed February 11th, without litigation.

CASES REFERRED DURING 1915.

Allegheny County.

Case of Margaret Cook, owner, John Cook, tenant, Patton township, charged with nuisance arising from garbage dump. Referred November 24th. Information made December 4th, before Alderman J. J. Kirby, of Pittsburgh. At the hearing on December 22nd, the defendant was held for the January, 1916, term of quarter sessions court. Open at the end of the year.

Berks County.

Case of Owen Bixler, Cumru township, pollution of Angelica creek above Angelica Water Company intake. Referred January 22nd. Reported closed April 22nd, without litigation.

Case of H. T. Marks, Cumru township, pollution of Angelica creek above Angelica Water Company intake. Referred January 22nd. Reported closed May 28th, without litigation.

Case of Jacob Ludwig, Cumru township, pollution of Angelica creek above Angelica Water Company intake. Referred January 22nd. Open at the end of the year.

Case of Solomon Stein, owner, Harry E. Mohn, tenant, Albany township, pollution of a tributary to Maiden creek above Reading City intake. Referred January 22nd. Reported closed April 22nd, without litigation.

Case of Levi Wink, Albany township, pollution of a tributary to Maiden creek above Reading City intake. Referred January 22nd. Open at the end of the year.

Case of William Schroeder, Albany township, pollution of a tributary to Maiden creek above Reading City intake. Referred January 22nd. Reported closed October 22nd, without litigation.

Case of Lenius Dietrick, Albany township, pollution of a tributary to Maiden creek above Reading City intake. Referred January 22nd. Reported closed February 19th, without litigation.

Case of Francis Lenhart, Albany township, pollution of a tributary to Maiden creek above Reading City intake. Referred January 22nd. Open at the end of the year.

Case of Edgar Bailey, Albany township, pollution of a tributary to Maiden creek above Reading City intake. Referred January 22nd. Reported closed October 23rd, without litigation.

Case of Caroline Dietrich, Albany township, pollution of a tributary to Maiden creek above Reading City intake. Referred January 22nd. Reported closed April 22nd, without litigation.

Case of James Snyder, Albany township, pollution of a tributary to Maiden creek above Reading City intake. Referred January 22nd. Reported closed February 19th, without litigation.

Case of Albert Baucher, Albany township, pollution of a tributary to Maiden creek above Reading City intake. Referred January 22nd. Reported closed April 22nd, without litigation.

Case of Wallace Hemmerly, Albany township, pollution of Maiden creek above Reading City intake. Referred January 22nd. Reported closed July 14th, without litigation.

Bradford County.

Case of Robert Boyd, Canton township, pollution of a tributary of Mill creek above above Canton borough intake. Referred May 19th. Reported closed June 18th, out litigation.

Case of H. N. Scott, Armenia township, pollution of a tributary of Mill creek above Canton borough intake. Referred May 19th. Reported closed June 18th, without litigation.

Chester County.

Case of William Jackson, West Goshen township, pollution of a tributary to Chester creek. Referred May 4th. Reported closed July 24th, without litigation.

Case of Thomas Richmond, East Brandywine township, pollution of a tributary to East Brandywine creek. Referred May 4th. Reported closed June 5th, without litigation.

Case of William C. Griffith, Caln township, pollution of a tributary to West Brandywine creek. Referred May 4th. Reported closed December 31st, without litigation.

Case of Joseph Bellock, Charlestown township, pollution of a tributary to Pickering creek above the North Springfield Water Company intake. Referred May 4th. Reported closed August 9th, without litigation.

Case of M. Darlington & Sons, West Marlboro township, pollution of Doe run. Referred April 14th. Open at the end of the year.

Case of Pennsylvania Railroad Company, owner, Joseph Burns, tenant, Easttown township, pollution of Darby creek. Referred April 13th. Reported closed May 22nd, without litigation.

Case of E. H. Jacobs, West Goshen township, pollution of tributary to Brandywine creek. Referred June 9th. Reported closed July 24th, without litigation.

Case of Harry Pyle, owner, E. Darlington & Bro., tenants, Pennsburg township, pollution of a tributary to West Brandywine creek. Referred June 12th. Open at the end of the year.

Elk County.

Case of John Wolf, Benzinger township, pollution of a tributary to Powers run above the Johnsonburg Water Company intake. Referred August 25th. Information was made September 20th, before Justice of the Peace John B. Forster, at St. Marys, and at the hearing on September 20th, the defendant was held for the October term of quarter sessions court. On October 2nd, an agreement was made with Mr. D. J. Driscoll, attorney for John Wolf, with the consent of Mr. F. W. McFarlin, District Attorney, to enter nolle prosequi upon the payment of all costs, and by making a complete and permanent abatement. The defendant having failed to make a permanent abatement, a new information was made December 13th, before Justice of the Peace John B. Forster, St. Marys, and at the hearing on December 13th, the defendant was held for the next term of quarter sessions court. Open at the end of the year.

Lackawanna County.

Case of George Benjamin, Springbrook township, pollution of Panther creek above Springbrook Water Company intake. Referred November 22nd. Information was made November 23rd, before Alderman Miller at Scranton. At the hearing on December 4th, the defendant was bound over to the January, 1916, term of court. Open at the end of the year.

Case of Samuel Kunkle, Albany township, pollution of a tributary to Maiden creek above Reading City intake. Referred January 22nd. Information made September 1st, before Alderman Weber at Reading. At the hearing on September 8th, the defendant asked for a continuance of the case and agreed to abate the nuisance. The application was granted on condition that the defendant pay the costs of prosecution. Open at the end of the year.

Case of J. J. Long, Albany township, pollution of a tributary to Maiden creek above Reading City intake. Referred January 22nd. Reported closed February 19th, without litigation.

Case of Jacob Beck and Lewis Heffner, Albany township, pollution of a tributary to Maiden creek above Reading City intake. Referred January 22nd. Reported closed July 14th, without litigation.

Case of Frank Ruth, owner, Thomas Snyder tenant, Albany township, pollution of a tributary to Maiden creek above Reading City intake. Referred January 22nd. Reported closed April 22nd, without litigation.

Case of Lenanus Greenwalt, Albany township, pollution of a tributary to Maiden creek above Reading City intake. Referred January 22nd. Reported closed April 21st, without litigation.

Case of Daniel Zettlemoyer, owner, Harvey Zettlemoyer, tenant, Albany township, pollution of a tributary to Maiden creek above Reading City intake. Referred January 22nd. Reported closed October 23rd, without litigation.

Case of J. Frank Heinley, Albany township, pollution of a tributary to Maiden creek above Reading City intake. Referred January 22nd. Reported closed July 14th, without litigation.

Case of M. K. Trexler, owner, M. S. Bausher, tenant, Albany township, pollution of a tributary to Maiden creek above Reading City intake. Referred January 22nd. Open at the end of the year.

Case of William Bausher, Albany township, pollution of a tributary to Maiden creek above Reading City intake. Referred January 22nd. Reported closed of the year.

Case of Paul A. Rich, owner, Irwin Ollinger, tenant, Cumru township, pollution of Angelica creek above the Angelica Water Company intake. Referred February 9th. Reported closed June 10th, without litigation.

Case of William H. Dietrich, Muhlenburg township, pollution of a tributary to Schuylkill river. Referred May 4th. Reported closed October 25th, without litigation.

Case of Moses Beam, Robeson township, pollution of Allegheny creek. Referred May 4th. Open at the end of the year.

Case of Edwin Wink, Greenwich township, pollution of a tributary to Maiden creek above Reading intake. Referred May 4th. Reported closed July 8th, without litigation.

Case of Pauline Reieisch, Lower Alsace township, pollution of a tributary of Valley creek above Engleman reservoir, a supply to Reading City. Referred May 4th. Reported closed May 14th, without litigation.

Case of Edward Bachman, Greenwitch township, pollution of a tributary of Maiden creek above Reading City intake. Referred May 4th. Reported closed October 23rd, without litigation.

Case of James Moore, Robeson township, pollution of Allegheny creek. Referred May 4th. Reported closed July 8th, without litigation.

Lehigh County.

Case of Mike Stampo, North Whitehall township, pollution of Spring creek above Clear Spring Water Company intake. Referred April 26th. Reported closed June 29th, with litigation.

Lycoming County.

Case of J. E. and C. K. Flock, Salladasburg borough, pollution of Larrys creek. Referred May 18th. Reported closed June 7th, without litigation.

Case of Manning S. Thomas, Salladasburg borough, pollution of Larrys creek. Referred May 18th. Open at the end of the year.

Mifflin County.

Case of James R. Ramsey, Armagh township, pollution of Honey creek above the Reedsville and Lewistown Water Company intake. Referred March 18th. Open at the end of the year.

Monroe County.

Case of John Overfield, Middle Smithfield township, pollution of Bushkill creek. Referred May 24th. Reported closed June 3rd, without litigation.

Case of Samuel Table, owner, Fred Table, tenant, Hamilton township, pollution of a tributary to McMichaels creek. Referred May 24th. Reported closed August 17th, without litigation.

Northampton County.

Case of Uhl Brewing Company, owner, A. A. Henry, tenant, Lehigh township, pollution of a tributary to Hokendauqua creek. Referred May 6th. Reported closed June 29th, without litigation.

Tioga County.

Case of Arthur Preston, Ward township, pollution of a tributary of Mill creek above Canton borough intake. Referred May 19th. Reported closed June 18th, without litigation.

Case of Mrs. Charles Smith, Ward township, pollution of a tributary to Mill creek above Canton borough intake. Referred May 19th. Reported closed July 14th, without litigation.

York County.

Case of Mrs. Isaac Hess, owner, Jacob Hess tenant, West Manheim township, pollution of a tributary to Little Conewago creek above the Hanover & McSherrystown Water Company intake. Referred November 18th. Information was made November 19th, before Alderman N. C. May at York. Hearing November 20th. The defendant, Jacob Hess, was bound over to the January, 1916, term of court. Open at the end of the year.

VII. CONCLUSIONS.

There are two propositions which encompass the entire scope of the administration of the law for the preservation of the public health in so far as the discharge of sewer systems is concerned, and they are:

FIRST: The degree of safety which can be expected to be obtained in treating sewage for the removal of bacterial infection.

SECOND: The relative importance of sewage disposal plants and other health protective work, including treatment plants for water works, regarded in the light of the limited resources of the municipal corporation as defined by the constitutional limits of indebtedness, and of the private corporation, as determined by water rates fixed by franchise or contract with the municipality.

In settling these questions in any particular case, a thorough consideration of all the factors must be had. Each case is a special problem in itself. In Pennsylvania, owing to the variety of watersheds, geological formation and the development of natural resources, each of which, to a greater or less degree, determines the quality and quantity of the waters flowing from the watershed, it is practically impossible to adopt and promulgate any general standard for the guidance of local authorities and experts employed by them, with respect to water works systems and sewer systems and the quality of the waters which are the sources of supply to the public. Some of the streams in Pennsylvania are largely used as carriers of industrial wastes, particularly in the coal fields, where drainage from mines destroys practically all life in the waters. The highest court of the Commonwealth and the Legislature have each determined the rights of corporations in these districts. In preserving the purity of the waters of the State, each municipality or private corporation, in what it does or wishes to do, has its own peculiar relationship to the problem.

The policy of setting forth at length many of the reasons which govern determinations of the Commissioner of Health, or of the Governor, Attorney General and Commissioner of Health in the case of sewage disposal, which up to 1911 prevailed in the decrees, has been discontinued. In substitution therefor many conferences have been held during the year with local authorities and a better understanding of the entire subject has resulted. When necessary, engineers and others can obtain information by reference to reports on file in the office of the Department.



DIVISION OF ACCOUNTING AND PURCHASING.

E. I. SIMPSON, *Chief of Division.*

THE DIVISION OF ACCOUNTING AND PURCHASING.

The Commissioner respectfully reports that under the appropriations of the Legislature of 1913, for the term beginning June 1, 1913, and ending May 31, 1915, for the use of the several Divisions of the Department, there were received and expended during 1915 the amounts shown in the detailed statement herewith.

He has kept in close touch with the finances and purchasing, and all contracts have been carefully considered and made to conform to each purchase.

ACT NO. 407, SESSION OF 1913.

Summary showing balance to December 31, 1914, as per the ninth Annual Report of the Department.

Item No. 1, for the payment of the salaries of the General Office, Medical Division, Laboratories and Experimental Stations, Division Distribution of Biological Products, Bureau of Vital Statistics, Morbidity and Marriage Statistics, Sanitary Engineering Division, Division of Accounting and Purchasing, Division of Supplies and Division of Dispensaries, the sum of,		$404,217 50
Total expenditures as per report December 31, 1913,	$117,500 25	
Total expenditures as per report December 31, 1914,	200,450 64	
		317,950 89
Unexpended balance appropriation, January 1, 1915,		$86,266 61

And Item No. 2, for the payment of the cost of diphtheria antitoxin and other products for free distribution for the poor; for the employment of such special and assistant engineers, stream and sanitary inspectors, and such other employes as may be necessary; for the fees and necessary traveling expenses of the county medical inspectors and rural health officers; for the necessary traveling expenses of the Commissioner of health, his assistants and other employes; for the maintenance of the Bureau of Vital and Morbidity statistics; for the maintenance of laboratories and experimental stations; and for the payment of all other necessary expenses of the Department of Health in supervising epidemics of diseases and in protecting the public health, two years, the sum of,		$950,000 00
Total expenditures as per report December 31, 1913,	$266,069 57	
Total expenditures as per report December 31, 1914,	391,121 43	
		657,191 00
Unexpended balance appropriation, January 1, 1915,		$292,809 00

And Item No. 3, for the constructing, equipping and maintaining sanatoria, infirmaries and dispensaries for the free treatment of indigent persons affected with tuberculosis; and for the maintenance of laboratories for sanitary supervision, isolation and treatment of indigent persons affected with tuberculosis; and for the preventive education of the public; for the payment of salaries and for all other necessary expenses, which may be incurred in this tuberculosis work, for two years, the further sum of, ...		$2,625,000 00
Total expenditures as per report December 31, 1913,..	$515,672 81	
Total expenditures as per report December 31, 1914,..	1,288,571 69	
		1,804,244 00
Unexpended balance appropriation, January 1, 1915,		$820,756 00

And Item No. 4, for the medical inspection of the pupils of the public schools, in accordance with the provisions of the school code, the sum of, ...		$200,000 00
Total expenditures as per report December 31, 1913,..	$41,262 08	
Total expenditures as per report December 31, 1914,..	91,790 62	
		133,052 70
Unexpended balance appropriation, January 1, 1915,		$66,947 30

And that the receipts and expenditures on account of these several appropriations from January 1, 1915, to December 31, 1915, have been as follows:

GENERAL FUND, ACT NO. 407, ITEM NO. 1.

RECEIPTS.

The Auditor General issued warrants on account General Salaries as follows:		
January 21, ...	$15,961 55	
January 21, ...	833 33	
February 26, ...	16,001 63	
February 26, ...	833 33	
March 26, ...	16,001 34	
March 26, ...	833 34	
April 24, ...	16,001 55	
April 24, ...	833 33	
May 27, ...	16,001 36	
May 27, ...	833 31	
		$84,134 55
		$84,134 55

DISBURSEMENTS.

Salaries paid by State Treasurer:		
General office, ...	$6,624 94	
Division of Accounting and Purchasing, ...	9,808 30	
Santary Engineering Division, ...	23,999 76	
Morbidity and Marriage Statistics.	2,700 00	
Bureau of Statistics (vital), ...	8,474 96	
Division of Dispensaries, ...	7,220 83	
Medical Division, ...	10,191 62	
Laboratories and Experimental Stations, ...	5,760 00	
Division of Distribution of Biological Products, ...	2,650 00	
Division of Supplies, ...	2,537 50	
Commissioner's salary, ...	4,166 64	
		$84,134 55
		$84,134 55

SUMMARY.

Appropriation,		$404,217 50
Expenditures from June 1, 1913, to December 31, 1913, as per report December 31, 1913,	$117,500 25	
Expenditures from January 1, 1914, to December 31, 1914,	200,450 64	
Expenditures from January 1, 1915, to December 31, 1915,	84,134 55	
Unexpended balance lapsing,	2,132 06	
	$404,217 50	$404.217 50

GENERAL FUND, ACT NO. 407, ITEM NO. 2.

RECEIPTS.

Cash on hand January 1, 1915,	$15,725 61	
Received from the Auditor General warrants on account as follows:		
January 20,	39,583 33	
February 23,	39,583 33	
March 27,	39,583 33	
May 1,	39,583 33	
May 28,	39,583 33	
		$213,642 26
		$213,642 26

DISBURSEMENTS.

Medical Division.

Expenses health officers and county medical inspectors on account correspondence, reports, inspecting, quarantining and disinfecting the following diseases and nuisances:		
Cancer,	$7 56	
Chicken pox,	11,065 01	
Cerebrospinal meningitis,	81 75	
Cholera,	3 60	
Diphtheria,	42,266 16	
Dysentery,	25 95	
Erysipelas,	1,309 49	
Foot and mouth disease,	890 54	
Infantile paralysis,	30 76	
Malaria fever,	41 72	
Measles,	12,788 63	
Mumps,	11,152 09	
Pneumonia,	503 39	
Scabies,	286 79	
Scarlet fever,	12,371 07	
Smallpox,	2,647 26	
Syphilis,	20	
Tetanus,	591 36	
Tonsillitis,	55 56	
Tuberculosis,	1,878 20	
Typhoid fever,	8,077 70	
Whooping cough,	5,387 42	
		$111,462 21

Miscellaneous Expenditures.

Blanket affidavits,	$8 75
Bureau of Housing,	897 70
Commissioner's traveling expenses,	150 58
County medical inspectors,	2,396 21
Disinfectants,	5,693 89
Educational matter,	580 44
Freight and drayage,	1,172 63
Health officers,	1,374 48
Inspecting local boards of health,	24 07

Laboratory,	3,900 66	
Legal services,	2,437 39	
Medical and sanitary school inspection,	2.035 47	
Nuisance inspection,	2,076 04	
Traveling Exhibit,	675 90	
Traveling expenses of the Commissioner's Secretary,	240 68	
		23,664 89

Engineering Division.

Engineers' salaries,	$2,386 35	
Inspectors' salaries,	21,219 00	
Pure water inspection,	28,295 90	
		51,901 25

Division of Vital, Morbidity and Marriage Statistics.

Marriage statistics,	$1,740 00	
Vital statistics,	1,280 80	
		3,020 80

General Expenses.

Clerical salaries,	$9,184 13	
Domestic salaries,	486 33	
General expenses,	134 80	
Office expenses,	3,103 70	
Postage,	7,330 20	
		20,239 16
Total expenditures on account of General Fund from January 1, 1915, to December 31, 1915,		$210,288 31
Cash Balance returned to State Treasurer, September 3, 1915,		3,353 95
		$213,642 26

Note.

The Department collected from different boroughs and townships the sum of	$558 39
(which the Department had expended in administering the health laws).	
There was paid to the State Treasurer to be credited by him to the General Fund of 1915,	151 31
Balance on hand January 1, 1916, to be returned to State Treasurer,	$407 08

SUMMARY.

Appropriation,		$950,000 00
Expenditures from June 1, 1913, to December 31, 1913, as per report December 31, 1913,	$266,069 57	
Expenditures from January 1, 1914, to December 31, 1914,	391,121 43	
Expenditures from January 1, 1915, to December 31, 1915,	210,288 31	
Balance lapsing and re-appropriated to General 1915 Fund as per Act No. 429, Session of 1915,	82,520 69	
	$950.000 00	$950,000 00

Note.

The following amounts were received by the Department:

March 3, refunded by Adams Express Co.,	$1 80
March 3, refunded by Adams Express Co.,	2 50
April 7, for water permits—Engineering Division,	90
April 9, witness fees and mileage,	11 58
May 13, refunded by Adams Express Co.—lost boxes.	5 00
May 13, refunded by American Express Co., overcharge,	10
May 13, refunded by Adams Express Co., overcharge	1 06
June 3, interest on bank balance,	292 38
July 13, overcharge on livery hire,	6 00
July 21, refunded on express charges, E. R. Shollenberger,	24
July 22, Treasurers' salary checks—C. T. Maclay, Inspectors,	150 00
July 21, refunded by Adams Express Co.,	66
July 22, witness fees and mileage,	50 96
August 25, permit issued by Engineering Division,	75
September 3, interest on bank balance,	142 10
December 31, fees collected for certified birth and death certificates,	1,165 00
	$1,831 03

These were returned to the State Treasurer on the following dates:

March 3,	$1 80
March 3,	2 50
April 13,	90
April 15,	11 58
May 18,	5 00
May 18,	10
May 18,	1 06
June 3,	292 38
July 28,	24
July 28,	150 00
July 28,	66
July 28,	50 96
July 30,	6 00
August 28,	75
September 3,	142 10
December 31,	1,165 00
	$1,831 03

TUBERCULOSIS FUND, ACT NO. 407, ITEM NO 3.

RECEIPTS.

Cash on hand January 1, 1915, as per report December 31, 1914,	$55,131 00	
Received from the Auditor General warrants on account as follows:		
January 22,	109,375 00	
February 26,	109,375 00	
March 3,	109,375 00	
March 27,	109,375 00	
April 24,	109,375 00	
May 1,	109,375 00	
June 17,	109,375 00	
		$820,756 00
		$820,756 00

DISBURSEMENTS.

Dispensaries.

Maintenance:			
Clerical salaries,		$3,831 61	
Disinfectants,		429 70	
Doctors' salaries,		37,319 46	
Drugs,		1,958 61	
Freight and drayage,		286 23	
Janitors' services,		3,995 90	
Medical supplies,		155 07	
Milk,		63,187 61	
Nurses' salaries,		47,122 38	
Operating expenses,		7,250 11	
Postage,		1,060 26	
Rent,		10,397 10	
Salad oil,		1,566 30	
Traveling expenses,		9,761 69	
			$188,322 03
Miscellaneous expenditures:			
Furnishings,		$202 80	
Operating supplies,		1,037 78	
Traveling Tuberculosis Exhibit,		4,951 60	
			6,192 18
Total expenditures on account Dispensaries from January 1, 1915, to December 31, 1915,			$194,514 21

Mont Alto Sanatorium.

Maintenance:			
Blacksmith shop,		$431 33	
Clerical salaries,		1,549 20	
Coal,		9,102 87	
Doctors' salaries,		8,926 92	
Foodstuffs,		52,072 06	
Furnishings and supplies,		2,776 67	
Insurance,		8,566 31	
Medical supplies,		2,638 04	
Milk and eggs,		48,279 63	
Miscellaneous salaries on account maintenance,		40,608 54	
Nurses' salaries,		14,402 47	
Operating expenses and supplies,		24,861 24	
Postage,		101 30	
Poultry farm,		768 69	
Traveling expenses on account maintenance,		408 36	
			$215,483 63
Plant expenditures:			
Miscellaneous wages on account construction,		$104 44	
Poultry houses, etc.,		386 98	
Roads, walks, fences and grading		283 87	
Miscellaneous construction and repairs,		2,207 90	
Traveling expenses on account construction,		25 32	
			3,008 51
Total expenditures on account Mont Alto Sanatorium from January 1, 1915, to December 31, 1915,			218,492 14

Cresson Sanatorium.

Maintenance:			
Blacksmith shop,		$458 35	
Clerical salaries,		903 00	
Coal,		3,196 46	
Doctors' salaries,		3,196 08	
Foodstuffs,		19,463 14	
Furnishings and supplies,		2,043 12	

Insurance,	2,693 35		
Medical supplies,	1,102 51		
Milk and eggs,	16,729 63		
Miscellaneous salaries on account maintenance,	23,189 74		
Nurses' salaries,	4,243 33		
Operating expenses and supplies,	7,728 21		
Postage,	50 00		
Poultry farm,	708 89		
Traveling expenses on account maintenance,	112 38		
		$85,818 19	
Plant expenditures:			
Horses, mules, wagons, etc.,	$643 50		
Miscellaneous construction and repairs,	4,561 45		
Monessen and Pittsburgh Tent Colony,	152 74		
Poultry houses, etc.,	2,366 36		
On account of construction contracts,	88,782 60		
Roads, walks, fences and grading,	330 87		
		96,847 52	
Total expenditures on account Cresson Sanatorium from January 1, 1915, to December 31, 1915,			182,665 71

Hamburg Sanatorium.

Mantenance:			
Clerical salaries,	$995 80		
Coal,	9,380 45		
Doctors' salaries,	4,416 71		
Foodstuffs,	23,635 88		
Furnishings and supplies,	495 25		
Insurance,	968 96		
Medical supplies,	1,859 16		
Milk and eggs,	21,568 46		
Miscellaneous salaries on account maintenance,	24,014 89		
Nurses' salaries,	6,662 47		
Operating expenses and supplies,	12,451 74		
Postage, etc.,	317 88		
Poultry farm,	27 00		
Traveling expenses on account maintenance,	498 73		
		$107,293 38	
Plant expenditures:			
Furnishings,	$29,116 45		
Fire protection equipment,	642 90		
Miscellaneous construction and repairs,	8,047 97		
Motor truck,	2,202 35		
On account of construction contracts,	75,147 39		
Roads, walks, fences and grading,	2,633 50		
		117,790 56	
Total expenditures on account Hamburg Sanatorium, from January 1, 1915, to December 31, 1915,			225,083 94
Total expenditures on account Tuberculosis Fund from January 1, 1915, to December 31, 1915,			$820,756 00

SUMMARY.

Appropriation,		$2,625,000 00
Expenditures from June 1, 1913, to December 31, 1913, as per report December 31, 1913,	$515,672 31	
Expenditures from January 1, 1914, to December 31, 1914,	1,288,571 69	
Expenditures from January 1, 1915, to December 31, 1915,	820,756 00	
	$2,625,000 00	$2,625,000 00

Note:—Unfinished Contracts:	
Contracts remaining unfinished and unpaid May 31, 1915,	$115,524 45

Note:—The following amounts were received by the Department:

February 3, Insurance account of cottage destroyed by fire at Mont Alto,	$100 00
April 7, Refunded on thermometers,	35 50
April 7, Conscience money,	1 00
April 9, Refunded on thermometers,	25 50
April 13, Refunded on thermometers,	74 00
April 22, Refunded on thermometers,	58 00
April 23, Insurance account of cottage destroyed by fire at Mont Alto,	50 00
April 27, Refunded on thermometers,	13 50
April 30, Refunded on thermometers,	11 00
May 7, Refunded on thermometers,	66 50
May 10, Refunded on thermometers,	22 50
May 13, Refunded on thermometers,	5 00
May 19, Refunded on thermometers,	3 50
May 28, Refunded on thermometer,	49 00
June 16, Interest on bank balance,	828 33
June 17, Refunded by Pennsylvania Railroad,	2 14
June 26, Refunded on Tuberculosis voucher,	16 04
June 28, Refunded by Pennsylvania Railroad,	1 34
July 21, Refunded by Pennsylvania Railroad,	75
September 30, Interest on bank balance,	330 06
November 12, Refunded on voucher B-59590,	2 48
December 20, Refunded by Phila. & Reading Ry. Co.,	15 00
	$1,711 14

These were returned to the State Treasurer on the following dates:

March 3,	$100 00
April 7,	1 00
April 13,	35 50
April 15,	25 50
April 21,	74 00
April 28,	58 00
April 28,	50 00
April 30,	24 50
May 17,	89 00
May 26,	8 50
June 3,	49 00
June 16,	828 33
June 17,	2 14
June 26,	16 04
June 28,	1 34
July 28,	75
September 30,	330 06
November 12,	2 48
December 20,	15 00
	$1,711 14

MEDICAL SCHOOL INSPECTION FUND, ACT NO. 407, ITEM NO. 4.

RECEIPTS.

Cash on hand January 1, 1915, as per report December 31, 1914,	$280 58	
Received from the Auditor General warrants on account as follows:		
January 7,	16,666 66	
January 28,	25,000 00	
February 15,	25,000 06	$66,947 30
		$66,947 30

DISBURSEMENTS.

Miscellaneous expenditures:		
Clerical salaries,	$3,416 66	
Doctors' fees,	62,540 05	
Domestic salaries,	6 00	
Postage,	900 00	
Supplies,	7 24	
Traveling expenses,	77 35	
Total expenditures on account Medical School Inspection Fund from January 1, 1915, to December 31, 1905,		$66,947 30
		$66,947 30

SUMMARY.

Appropriation,		$200,000 00
Expenditures from June 1, 1913, to December 31, 1913, as per report December 31, 1913,	$41,262 08	
Total expenditures from January 1, 1914 to December 31, 1914,	91,790 62	
Total expenditures from January 1, 1914, to December 31,1915,	66,947 30	
	$200,000 00	$200,000 00

Note:—The following amount was received by the Department:

June 2, Interest on bank balance,	$115 56
	$115 56

This amount was returned to the State Treasurer as follows:

June 2,	$115 56
	$115 56

The Commissioner further begs to report that the Legislature of 1915 appropriated the following sums for the use of several divisions of the Department for the term of two years from June 1, 1915, to May 31, 1917.

ACT NO. 429, SESSION OF 1915.

Item No. 2, for the payment of the cost of diphtheria antitoxin and other products for free distribution for the poor; for the employment of such special and assistant engineers, stream and sanitary inspectors and such other employees as may be necessary; for the fees and necessary traveling expenses of the county medical inspectors and rural health officers; for the necessary traveling expenses of the Commissioner of Health, his assistants and other employes; for the maintenance of the Bureau of Vital and Morbidity Statistics; and for the maintenance of laboratories and experimental stations; for educational work and for the payment of all other necessary expenses of the Department of Health in supervising epidemics of diseases and in protecting the public health, two years, the sum of,	$920,000 00
And in addition thereto, any balance remaining unexpended of the appropriation made to the Department of Health for the same purposes, for two years ending May 31, 1915, by the provisions of the General Appropriation Act approved July 16, 1913,	82,520 69
	$1,002,520 69

ACT NO. 429, SESSION OF 1915.

Item No. 1, for the payment of salaries of the General office, Medical Division, Laboratories and Experimental Stations, Division Distribution of Biological Products, Bureau of Vital Statistics, Morbidity and Marriage Statistics, Sanitary Engineering Division, Division of Accounting and Purchasing, Division of Supplies and Division of Dispensaries, the sum of,	$403,100 00
	$403,100 00

ACT NO. 429, SESSION OF 1915.

And Item No. 3, for the purpose of maintaining its sanatoria and dispensaries for the free treatment of indigent persons affected with tuberculosis, and for the necessary additions, furnishings and repairs thereto, and for educational work in curing and preventing tuberculosis; and for the purchase of food, supplies, and other necessities and for the payment of salaries and wages and all other necessary expenses incident thereto, the sum of, ...	$2,725,807 00
	$2,725,807 00

SUPPLEMENT OF ACT NO. 407, APPROPRIATION 1913, SESSION OF 1915.

And Item No. 4, for a deficiency arising in the appropriation made to the Department of Health for the construction, equipping and maintaining sanatoria, infirmaries and dispensaries, for the free treatment of indigent persons affected with tuberculosis; and for the maintenance of laboratories, for sanitary supervision, isolation and treatment of indigent persons affected with tuberculosis; and for the preventive education of the public, for the payment of salaries and all other necessary expenses which may be incurred in this tuberculosis work, the sum of,..	$115,524 45
	$115,524 45

ACT NO. 429, SESSION OF 1915.

And Item No. 5, for the medical inspection of the pupils of the public schools, in accordance with the provisions of the school code, the sum of,.....	$190,000 00
	$190,000 00

ACT NO. 429, SESSION OF 1915.

And Item No. 6, for the operation of the Bureau of Housing, and for the salaries of officers and employees of said bureau, for two years, the sum of,..	$14,000 00
	$14,000 00

And that the receipts and expenditures on account of these appropriations from June 1, 1915, to December 31, 1915, have been as follows:

GENERAL FUND, ACT NO. 429, ITEM NO 1.
RECEIPTS.

The Auditor General issued warrants on account General Salaries as follows:

June 26, ...	$833 34
June 26, ...	15,879 32
July 15, ...	7,939 50
July 27, ...	833 33
July 31, ...	7,939 54

August 15,	7,939 50	
August 31,	7,939 54	
September 2,	833 33	
September 17,	7,793 74	
September 30,	833 33	
September 30,	7,939 57	
October 15,	7,939 57	
October 31,	7,939 57	
October 31,	833 33	
November 15,	7,939 57	
November 30,	7,939 57	
November 30,	833 34	
December 23,	833 33	
December 23,	15,879 32	$116,841 64
		$116,841 64

DISBURSEMENTS.

Salaries paid by State Treasurer:		
General office,	$9,858 28	
Division of Accounting and Purchasing,	14,746 72	
Sanitary Engineering Division,	31,704 12	
Bureau of Vital Statistics,	15,295 00	
Division of Dispensaries,	10,021 66	
Medical Division,	14,122 53	
Laboratories and Experimental Stations,	7,997 50	
Division of Distribution of Biological Products,	3,710 00	
Division of Supplies,	3,552 50	
Commissioner's salary,	5,833 33	$116,841 64
		$116,841 64

SUMMARY.

Appropriation,	$403,100 00
Expenditures from June 1, 1915, to December 31, 1915,	116,841 64
Unexpended balance appropriation, January 1 1916,	$286,258 36

GENERAL FUND, ACT NO. 429, ITEM NO. 2.

RECEIPTS.

The Auditor General issued warrants on account as follows:		
July 2,	$38,333 33	
August 19,	38,333 33	
October 16,	38,333 33	
November 13,	38,333 33	
December 10,	38,333 33	$191,666 65
		$191,666 65

DISBURSEMENTS.

Medical Division.

Expenses health officers and county medical inspectors on account of correspondence, reports, inspecting, quarantining and disinfecting the following diseases and nuisances:	
Cerebrospinal meningitis,	$84 03
Chicken pox,	1,761 70
Diphtheria,	18,820 88
Dysentery,	26 31
Erysipelas,	176 53
Foot and mouth disease,	5 12
Infantile paralysis,	659 51
Leprosy,	10 69

Malaria fever,	10 79	
Measles,	5,634 05	
Mumps,	2,225 16	
Pneumonia,	52 43	
Scabies,	390 97	
Scarlet fever,	4,039 73	
Smallpox,	2,104 70	
Syphilis,	33 93	
Tetanus,	584 47	
Tonsillitis,	7 25	
Tuberculosis,	1,199 96	
Typhoid fever,	11,139 87	
Whooping cough,	3,192 45	
		$52,160 53

Miscellaneous expenditures:

Baby saving show,	$30 25	
Blanket affidavits,	8 75	
Commissioner's traveling expenses,	25 04	
County medical inspectors,	1,268 57	
Disinfectants,	4,183 05	
Educational matter,	419 37	
Freight and drayage,	2,550 70	
Housing inspection,	4 50	
Health officers,	738 97	
Laboratory,	4,557 06	
Legal services,	424 75	
Medical and sanitary school inspection,	75 01	
Nuisance inspection,	2,625 77	
Traveling exhibit,	6,305 10	
Traveling expenses of the Commissioner's Secretary,	136 85	
		23,353 74

Engineering Division:

Engineers' salaries,	$5,448 90	
Inspectors' salaries,	32,439 68	
Pure water inspection,	28,786 42	
		66,675 00

Division of Vital, Morbidity and Marriage Statistics:

Morbidity and marriage statistics,	$1,248 16	
Vital statistics,	4,097 15	
		5,345 31

General expenses:

Clerical salaries,	$8,766 49	
Clerical salaries,	$8,766 49	
Domestic salaries,	647 00	
General expenses,	470 59	
Office expenses,	1,501 98	
		17,387 66

Total expenditures on account of General Fund from June 1, 1915, to December 31, 1915,	$164,922 24
Cash on hand January 1, 1916,	26,744 41
	$191,666 65

SUMMARY.

Appropriation,	$1,002,520 69
Expenditures from June 1, 1915, to December 31, 1915,	164,922 24
Unexpended balance appropriation, January 1, 1916,	$837,598 45

Note:—The following amounts were received by the Department:

October 19, Certified copies of water permits,	90
November 5, Certified copies of water permits,	6 00
November 5, Costs collected in suits,	9 98
November 16, Costs collected in suits,	12 16
November 22, Costs collected in suits,	30 30
November 30, Certified copies of water permits,	50
December 3, bank balance interest,	218 29
December 29, Refunded by Adams' Express Co.,	45
Year 1915, Fees for certified birth and death certificates,	2,435 00
	$2,713 58

These were returned to the State Treasurer on the following dates:

October 30,	90
November 15,	6 00
November 15,	9 98
November 22,	12 16
November 26,	30 30
November 30,	50
December 3,	218 29
December 30,	45
Year 1915,	2,435 00
	$2,713 58

TUBERCULOSIS FUND, ACT NO. 429, ITEM NO. 3.

RECEIPTS.

The Auditor General issued warrants on account as follows:

July 16,	$113,575 29	
August 31,	113,575 29	
September 3,	113,575 29	
October 7,	113,575 29	
November 5,	113,575 29	
December 16,	113,575 29	
		$681,451 74
		$681,451 74

DISBURSEMENTS.

Dispensaries.

Maintenance:		
Clerical salaries,	$3,897 39	
Disinfectants,	458 68	
Doctors' salaries,	38,535 76	
Drugs,	1,077 37	
Freight and drayage,	284 32	
Janitors' services,	4,037 20	
Medical supplies,	37 94	
Milk,	42,196 32	
Nurses' salaries,	47,125 58	
Operating expenses,	6,239 10	
Postage,	783 25	
Rent,	14,278 52	
Salad oil,	1,459 65	
Traveling expenses,	9,717 05	
Total expenditures on account of Dispensaries from June 1, 1915, to December 31, 1915,		$170,128 13

ACT NO. 316, SESSION OF 1913.

Boroughs and Townships.

Refunds—Re-appropriated to the 1915 General Fund:	
As per "Note" on page 12 of this report, the Department collected from different boroughs and townships during the year 1915 the sum of,	$558 39
(which the Department had expended in administering the health laws.)	
There was paid to the State Treasurer to be credited by him to the General Fund of 1915,	151 31
Balance on hand January 1, 1916, to be returned to State Treasurer,	$407 08

Mont Alto Sanatorium.

Maintenance:		
Clerical salaries,	$1,822 36	
Coal,	2,016 70	
Doctors' salaries,	9,979 91	
Foodstuffs,	68,735 95	
Furnishings and supplies,	7,147 26	
Insurance,	9,578 15	
Medical supplies,	4,978 60	
Milk and eggs,	53,011 90	
Miscellaneous salaries on account maintenance,	37,191 90	
Nurses' salaries,	14,608 09	
Operating expenses and supplies,	17,193 18	
Postage,	80 00	
Poultry farm,	689 87	
Traveling expenses on account maintenance,	472 59	
		$227,506 46
Plant expenditures:		
Automobile,	$385 75	
Miscellaneous construction and repairs,	3,868 55	
Roads, walks, fences and grading,	1,918 00	
Outside steam lines,	6,449 02	
		12,621 32
Total expenditures on account Mont Alto Sanatorium from June 1, 1915, to December 31, 1915,		$240,127 78

Cresson Sanatorium.

Maintenance:		
Clerical salaries,	$898 03	
Coal,	2,275 12	
Doctors' salaries,	4,069 68	
Foodstuffs,	25,169 26	
Furnishings and supplies,	2,533 24	
Insurance,	2,758 95	
Medical supplies,	1,296 44	
Milk and eggs,	16,758 99	
Miscellaneous salaries account maintenance,	23,042 99	
Nurses' salaries,	4,326 00	
Operating expenses and supplies,	6,485 53	
Postage,	50 00	
Poultry farm, etc.,	1 781 29	
Traveling expenses account maintenance,	75 71	
		$91,521 23

Plant expenditures:			
Furnishings and supplies,	$56 18		
Miscellaneous construction and repairs,	13,235 85		
Roads, walks, fences and grading,	552 98		
Poultry houses, etc.,	2,829 65		
		16,674 66	
Total expenditures on account Cresson Sanatorium from June 1, 1915, to December 31, 1915,			108,195 89

Hamburg Sanatorium.

Maintenance:			
Clerical salaries,	$1,140 00		
Coal,	5,718 27		
Doctors' salaries,	4,285 31		
Farm,	3 19		
Foodstuffs,	26,723 18		
Furnishings and supplies,	1,739 49		
Insurance,	2,247 58		
Medical supplies,	3,144 96		
Milk and eggs,	20,675 66		
Miscellaneous salaries account of maintenance,	23,380 84		
Nurses' salaries,	7,055 30		
Operating expenses and supplies,	6,126 58		
Postage,	50 00		
Poultry farm, etc.,	27 75		
Traveling expenses account of maintenance,	343 12		
		$102,661 23	
Plant expenditures:			
Furnishings,	$944 16		
Miscellaneous construction and repairs,	5,140 34		
Horses and mules,	629 87		
Roads, walks, fences and grading,	5,604 97		
		12,319 34	
Total expenditures on account Hamburg Sanatorium from June 1, 1915, to December 31, 1915,			114,980 57
Total expenditures on account Tuberculosis Fund from June 1, 1915, to December 31, 1915,			$633,432 37
Cash on hand January 1, 1916,			48.019 37
			$681,451 74

SUMMARY.

Appropriation,	$2,725,807 00
Expenditures from June 1, 1915, to December 31, 1915,	633,432 37
Unexpended balance appropriation, January 1, 1916,	$2,092,374 63

Note:—The following amounts were received by the Department:

August 10, Refunded by Phila. & Reading Ry. Co.,	90
August 18, Refunded by Phila. & Reading Ry. Co.,	3 00
August 25, Thermometer refunds,	11 50
October 11, Thermometer refunds,	8 00
October 13, Thermometer refunds,	7 50
October 15, Thermometer refunds,	3 00
October 16, Thermometer refunds,	2 00
October 27, Thermometer refunds,	4 00
October 29, Thermometer refunds,	3 00
November 9, Thermometer refunds,	4 00

November 22, Thermometer refunds,	50
November 27, Thermometer refunds,	1 00
December 2, Thermometer refunds,	2 00
December 6, Thermometer refunds,	1 00
December 13, Thermometer refunds,	4 50
December 15, Interest on bank balance,	572 94
December 20, Refunded by Pennsylvania Railroad Co.,	10 06
December 20, Thermometer refunds,	1 50
December 28, Thermometer refunds,	1 00
	$641 40

These were returned to the State Treasurer on the following dates:

August 21,	$3 90
August 28,	11 50
October 19,	20 50
October 30,	7 00
November 15,	4 00
November 26,	50
November 30,	1 00
December 9,	3 00
December 15,	572 94
December 20,	6 00
December 23,	10 06
December 30,	1 00
	$641 40

DEFICIENCY FUND, ACT NO. 1, ITEM NO. 4.

RECEIPTS.

The Auditor General issued warrants on account as follows:	
September 16,	$115,524 45
	$115,524 45

DISBURSEMENTS.

Plant expenditures:	
On account construction contracts Cresson Sanatorium,	$41,751 10
Cash on hand January 1, 1916,	73,773 35
	$115,524 45

SUMMARY.

Appropriation,	$115,524 45
Expenditures from June 1, 1915, to December 31, 1915,	41,751 10
Unexpended balance January 1, 1916,	$73,773 35

Note:—The following amount was received by the Department:

November 8, Interest on bank balance,	$326 32
This was returned to the State Treasurer:	
November 8,	$326 32

MEDICAL SCHOOL INSPECTION FUND, ACT NO. 429, ITEM NO. 5.

RECEIPTS.

The Auditor General issued warrants on account as follows:		
July 2,	$7,916 66	
September 29,	7,916 66	
November 9,	23,749 98	
		$39,583 30
		$39,583 30

DISBURSEMENTS.

Miscellaneous expenditures:		
Clerical salaries,	$4,821 84	
Domestic salaries,	80 40	
Doctors' fees,	26,506 95	
Freight and drayage,	13 25	
Postage,	1,000 00	
Supplies,	472 00	
Traveling expenses,	28 31	
Total expenditures on account of Medical School Inspection Fund from June 1, 1915, to December 31, 1915,		$32,922 75
Cash on hand January 1, 1916,		6,660 55
		$39,583 30

SUMMARY.

Appropriation,	$190,000 00
Expenditures from June 1, 1915, to December 31, 1915,	32,922 75
Unexpended balance appropriation, January 1, 1916,	$157,077 25

Note:—The following amount was received by the Department:

December 1, Bank interest,	$24 10
This was returned to the State Treasurer:	
December 1,	$24 10

HOUSING DIVISION, ACT NO. 429, ITEM NO. 6.

RECEIPTS.

The Auditor General issued warrants on account as follows:		
July 12,	$583 33	
August 6,	583 33	
September 29,	583 33	
December 10,	583 33	
		$2,333 32
		$2,333 32

DISBURSEMENTS.

Miscellaneous expenditures:		
Salaries,	$1,736 90	
Traveling expenses,	169 42	
Total expenditures on account Housing Division Fund from June 1, 1915, to December 31, 1915,		$1,906 32
Cash on hand January 1, 1916,		427 00
		$2,333 32

SUMMARY.

Appropriation,	$14,000 00
Expenditures from June 1, 1915, to December 31, 1915,	1,906 32
Unexpended balance appropriation, January 1, 1916,	$12,093 68

PANAMA-PACIFIC INTERNATIONAL EXPOSITION FUND.

The Commissioner further begs to report that the Panama-Pacific International Exposition Commission set aside the following amounts for the use of the Department of Health in establishing and maintaining a Health Exhibit at the Exposition held in San Francisco during the year 1915, and that the receipts and expenditures on account of this fund from February 4, 1915, to December 31, 1915, have been follows:

RECEIPTS.

February 4,	$10,000 00	
March 11,	10,000 00	
May 14, (interest on bank balance)	38 24	
July 26,	3,000 00	
September 1,	2,000 00	
October 19,	2,000 00	
December 29, (sale of table and electric bulbs),	6 50	
		$27,044 74

EXPENDITURES.

Construction:		
Material,	$8,013 69	
Wages,	9,657 34	
Rent, gas, coal,	538 00	
Express, freight, etc.,	2,407 90	
Traveling expenses,	522 30	
		$21,139 23
Maintenance:		
Wages,	$1,352 01	
Traveling expenses,	2,866 23	
Electric service at exhibit,	392 00	
		4,610 24
Total expenditures on account of Panama Fund from February 4, 1915, to December 31, 1915,		$25,740 47
Cash on hand January 1, 1916,		1,295 27
		$27,044 74

GRAND SUMMARY.

Summary showing total receipts and disbursements for the year 1915.

RECEIPTS.

Account of treasurer's salaries,	$200,976 19	
General fund,	405,308 91	
Tuberculosis fund,	1,502,207 74	
Medical school inspection fund,	106,530 60	
Housing fund,	2,333 32	
Deficiency fund,	115,524 45	
Panama-Pacific fund,	27,044 74	
Refund account,	7,363 13	
Collected from boroughs and townships,	558 39	
		$2,367,847 47
Total receipts,		**$2,367,847 47**

DISBURSEMENTS.

Salaries paid by State Treasurer for the several divisions,	$200,976 19	
General Fund:		
Medical division,	163,622 74	
Engineering division,	118,576 25	
Division of vital statistics,	8,366 11	
General expenses,	37,626 82	
Miscellaneous expenses,	47,018 63	
		$576,186 74
Tuberculosis Fund:		
Dispensaries,	$364,642 34	
Mont Alto:		
Maintenance,	442,990 09	
Construction,	15,629 83	
Cresson:		
Maintenance,,	177,339 42	
Construction,	155,273 28	
Hamburg:		
Maintenance,	209,954 61	
Construction,	130,109 90	
		1,495,939 47
Medical school inspection fund,		99,870 05
Housing division fund,		1,906 32
Panama fund,		25,749 47
Refunds returned to State Treasurer,		7,363 13
Returned to State Treasurer borough and township collections,		151 31
Returned cash balance of 1913 general fund to State Treasurer,		3,353 95
Cash on hand, January 1, 1916,		157,327 03
		$2,367,847 47



DIVISION OF SUPPLIES.

CHARLES HARTZELL, *Superintendent.*

96—16—1918



DIVISION OF SUPPLIES.

Requisitions for supplies required by nearly seven hundred health officers and one hundred and seventeen dispensaries are mailed to us on the first or fifteenth of each month (except in urgent cases), and in this manner we are able to avoid duplications and are prepared to handle all work of a single kind at one time.

The requisitions for the eleven other Divisions of the Department are taken care of on the first of the month. This includes their needs for stationery, desks, typewriters and other supplies wanted during the month.

The comparative table below indicates the growth of the number of shipments made by express during the past nine years:—

1907—July to December,	832
1908—January to June,	1824
1908—July to December,	2512
1909—January to June,	3376
1909—July to December,	3880
1910—January to June,	4313
1910—July to December,	2962
1911—January to June,	4904
1911—July to December,	3479
1912—January to June,	4275
1912—July to December,	4441
1913—January to June,	4331
1913—July to December,	4681
1914—January to June,	4523
1914—July to December,	4756
1915—January to June,	4446
1915—July to December,	4805

The above amounts do not include shipments made by freight several times each week, viz.:—the State health exhibit and supplies to the three sanatoria. This Division also receives and assorts all Department express and freight and delivers it to the Division for which it is intended.

All printed matter is ordered when necessary, received and counted. The form numbers range from 1 to 1,000, and a full supply of each one is kept in stock at all times.

During the year six hundred and ninety outfits for disinfecting were shipped to health officers and dispensaries, each outfit containing 88 pounds of formaldehyde.

The requests for Laboratory Outfits Nos. 1, 2, 3 and 5 are received daily. These requests are received from physicians throughout the State and the specimens are sent by them to the laboratory in Philadelphia for pathological examination. The outfits are arranged, assembled and supplied with descriptive literature in advance, so that all orders received are filled and shipped out immediately.

The mailing lists are constantly growing, and now include over 18,000 names. The monthly Bulletin of the Department is printed in issues of ten thousand, and copies are mailed once a month to people desirous of receiving them. The Annual Report (two thousand copies) is also mailed to organizations, institutions and individuals throughout the world interested in medicine and sanitation.

All supplies for carrying on the medical inspection of schools are counted, sorted and shipped from here. The lists of inspectors for each of the 66 counties are revised each year, owing to the numerous changes of address and resignations.

INDEX

	Page.
Abatement, orders of,	1060
Abington hospital,	123
Abington township, typhoid fever outbreak,	103
Abstracts of reports of county medical inspectors,	309
Accounting and purchasing. See division of accounting and purchasing, division of, personnel of,	89
Adams County:	
County medical inspector,	11
Township health officers,	14
School medical inspectors,	24
Local registrars,	38
Tuberculosis dispensary,	53
Distributors of antitoxin,	77
Abstract of report of county medical inspector,	309
Additional upfollow notes on former tuberculosis dispensary patients,	869
Addresses,	96,97,756
Addresses on tuberculosis,	756
Administrative work, medical inspection,	208
Advisory Board,	5,90,91,196
Meeting of the,	90
Rules and regulations of,	91,196
Ages, death rates per 1,000 population; corresponding,	474
Alleged case of whooping cough, Northampton County,	276
Alleged smallpox at Dickson City,	264
Allegheny County:	
County medical inspector,	11
County medical deputies,	12
Township health officers,	14
School medical inspectors,	24
Local registrars,	38
Tuberculosis dispensaries,	53
Distributors of antitoxin,	77
Abstract of report of county medical inspector,	311
Allegheny River, taste and odor of water at New Kensington,	1276
Allentown:	
Tuberculosis dispensary,	58
Sanitary index,	482
Outbreak of typhoid fever,	1358
Altoona:	
Tuberculosis dispensary,	54
Sanitary index,	482
Outbreak of typhoid fever,	1363
Anatomical Board Act,	99
Anterior poliomyelitis,	450
Anthrax,	323,437
Antitoxin, diphtheria,	1019,1024
Antitoxin, diphtheria, distributors of,	77
Antitoxin, tetanus,	1030,1031
Antityphoid vaccination,	158
Antityphoid vaccine,	140
Antivaccination,	194
Antivivisection,	194
Aphthous fever,	389
Appointments,	6
Appropriations,	197
Ardmore, tuberculosis dispensary,	58
Armstrong County:	
County medical inspector,	11
County medical deputy,	12
Township health officers,	14
School medical inspectors,	24
Local registrars,	39
Tuberculosis dispensary,	54
Distributors of antitoxin,	77
Abstract of report of county medical inspector,	314
Armstrong Water Company, Kittanning,	1314
Arnold, outbreak of typhoid fever,	1369
Arroyo tannery,	1297

Bacteriological evidence, Shippensburg water supply, ... 181
Baltimore & Ohio Railroad Company, railroad medical inspectors, ... 14
Bangor, tuberculosis dispensary, ... 59
Beaver County:
County medical inspector, ... 11
Township health officers, ... 14
School medical inspectors, ... 24
Local registrars, ... 39
Tuberculosis dispensaries, ... 54
Distributors of antitoxin, ... 77
Abstract of report of county medical inspector, ... 318
Beaver Falls:
Tuberculosis dispensary, ... 54
Sanitary index, ... 482
Bedford County:
County medical inspector, ... 11
County medical deputy, ... 12
Township health officers, ... 15
School medical inspectors, ... 25
Local registrars, ... 40
Tuberculosis dispensary, ... 54
Distributors of antitoxin, ... 77
Abstract of report of county medical inspector, ... 318
Bellefonte, tuberculosis dispensary, ... 55
Berks County:
County medical inspector, ... 11
County medical deputies, ... 12
Township health officers, ... 15
School medical inspectors, ... 25
Local registrars, ... 40
Tuberculosis dispensaries, ... 54
Distributors of antitoxin, ... 78
Abstract of report of county medical inspector, ... 320
Berwick, tuberculosis dispensary, ... 55
Bessemer Coal and Coke Company, ... 369
Bethlehem, sanitary index, ... 483
Biological products, ... 194
Division of distribution of, ... 1017
Division of distribution of, officers of, ... 76
Results obtained with the use of the biological products of the tubercle bacillus (suspension of dead tubercle bacilli, and extract of tubercle bacilli, or "Dixon's Fluid"), ... 944
Birth tables:
Table No. 1, ... 619
Table No. 2, ... 640
Table No. 3, ... 641
Table No. 4, ... 642
Table No. 5, ... 643
Births, ... 617
Births by nativity and age of mothers for the entire State, for cities and boroughs having more than 5,000 population, for cities and boroughs having less than 5,000 population, and for the rural sections of the State exclusive of all municipalities, ... 640
Births in the entire State for municipalities having more than 5,000 population, for groups of municipalities having less than 5,000 population, and for the rural sections of each county exclusive of all municipalities, by sex and month of birth:

Municipalities.

Allentown, ... 619
Altoona, ... 619
Ambridge, ... 619
Archbald, ... 620
Ashland, ... 620
Ashley, ... 620
Bangor, ... 620
Beaver Falls, ... 620
Bellevue, ... 620
Berwick, ... 620
Bethlehem, ... 620
Blakely, ... 620
Bloomsburg, ... 621
Braddock, ... 621
Bradford, ... 621
Bristol, ... 621
Butler, ... 621
Carbondale, ... 621

Carlisle, ... 621
Carnegie, ... 621
Carrick, ... 621
Catasauqua, ... 621
Chambersburg, ... 621
Charleroi, ... 621
Chester, ... 622
Clearfield, ... 622
Coaldale, ... 622
Coatesville, ... 622
Columbia, ... 622
Connellsville, ... 622
Conshohocken, ... 622
Coraopolis, ... 622
Corry, ... 622
Danville, ... 623
Darby, ... 623
Dickson City, ... 623
Donora, ... 623
DuBois, ... 623
Dunmore, ... 623
Duquesne, ... 623
Duryea, ... 623
East Conemaugh, ... 623
East Pittsburgh, ... 623
Easton, ... 623
Edwardsville, ... 623
Erie, ... 624
Etna, ... 624
Farrell, ... 624
Forest City, ... 624
Franklin, ... 624
Freeland, ... 624
Gilberton, ... 624
Glassport, ... 624
Greensburg, ... 624
Greenville, ... 625
Hanover, ... 625
Harrisburg, ... 625
Hazleton, ... 625
Homestead, ... 625
Huntingdon, ... 625
Indiana, ... 625
Jeannette, ... 625
Jersey Shore, ... 625
Johnstown, ... 625
Juniata, ... 625
Kane, ... 625
Kingston, ... 626
Knoxville, ... 626
Lancaster, ... 626
Lansford, ... 626
Larksville, ... 626
Latrobe, ... 626
Lebanon, ... 626
Lehighton, ... 626
Lewistown, ... 626
Lock Haven, ... 627
Luzerne, ... 627
McKeesport, ... 627
McKees Rocks, ... 627
Mahanoy City, ... 627
Meadville, ... 627
Middletown, ... 627
Midvale, ... 627
Milton, ... 627
Minersville, ... 627
Monessen, ... 627
Monongahela, ... 627
Mount Carmel, ... 628
Mount Pleasant, ... 628
Munhall, ... 628
Nanticoke, ... 628
New Brighton, ... 628
New Castle, ... 628
New Kensington, ... 628
Norristown, ... 628

North Braddock, ... 628
Northampton, ... 629
Oil City, ... 629
Old Forge, ... 629
Olyphant, ... 629
Philadelphia, ... 629
Phoenixville, ... 629
Pittsburgh, ... 629
Pittston, ... 629
Plymouth, ... 629
Pottstown, ... 629
Pottsville, ... 629
Punxsutawney, ... 629
Rankin, ... 630
Reading, ... 630
Ridgway, ... 630
Rochester, ... 630
St. Clair, Allegheny Co., ... 630
St. Clair, Schuylkill Co., ... 630
St. Marys, ... 630
Sayre, ... 630
Scottdale, ... 630
Scranton, ... 630
Shamokin, ... 631
Sharon, ... 631
Sharpsburg, ... 631
Shenandoah, ... 631
South Bethlehem, ... 631
Steelton, ... 631
Sunbury, ... 631
Swissvale, ... 631
Swoyersville, ... 631
Tamaqua, ... 631
Tarentum, ... 631
Taylor, ... 632
Throop, ... 632
Titusville, ... 632
Tyrone, ... 632
Uniontown, ... 632
Warren, ... 632
Washington, ... 632
Waynesboro, ... 632
West Berwick, ... 632
West Chester, ... 633
West Pittston, ... 633
Wilkes-Barre, ... 633
Wilkinsburg, ... 633
Williamsport, ... 633
Wilmerding, ... 633
Windber, ... 633
Winton, ... 633
York, ... 633

Counties.

Adams County, ... 633
Allegheny County, ... 633
Armstrong County, ... 633
Beaver County, ... 634
Bedford County, ... 634
Berks County, ... 634
Blair County, ... 634
Bradford County, ... 634
Bucks County, ... 634
Butler County, ... 634
Cambria County, ... 634
Cameron County, ... 634
Carbon County, ... 635
Centre County, ... 635
Chester County, ... 635
Clarion County, ... 635
Clearfield County, ... 635
Clinton County, ... 635
Columbia County, ... 635
Crawford County, ... 635
Cumberland County, ... 625
Dauphin County, ... 635
Delaware County, ... 635

Elk County, ... 635
Erie County, ... 636
Fayette County, ... 636
Forest County, ... 636
Franklin County, ... 636
Fulton County, ... 636
Greene County, ... 636
Huntingdon County, ... 636
Indiana County, ... 636
Jefferson County, ... 636
Juniata County, ... 637
Lackawanna County, ... 637
Lancaster County, ... 637
Lawrence County, ... 637
Lebanon County, ... 637
Lehigh County, ... 637
Luzerne County, ... 637
Lycoming County, ... 637
McKean County, ... 637
Mercer County, ... 637
Mifflin County, ... 637
Monroe County, ... 637
Montgomery County, ... 638
Montour County, ... 638
Northampton County, ... 638
Northumberland County. 638
Perry County, ... 638
Pike County 638
Potter County, ... 638
Schuylkill County, ... 638
Snyder County, ... 638
Somerset County, ... 639
Sullivan County, ... 639
Susquehanna County, ... 639
Tioga County, ... 639
Union County, ... 639
Venango County, ... 639
Warren County, ... 639
Washington County, ... 639
Wayne County, ... 639
Westmoreland County, ... 639
Wyoming County, ... 639
York County, ... 639
Number of children born to mothers, including present birth, according to nativity of mother, for the entire State and for certain subdivisions thereof, ... 641
Number of children living, including present birth, according to nativity of mothers, for the entire State and certain subdivisions thereof, ... 642
Plural and illegitimate births, according to nativity of mothers, for the entire State and certain subdivisions thereof, ... 643
Tabulation of births, ... 617
Births, deaths, marriages and diseases, registration of, ... 99
Blair County:
County medical inspector, ... 11
Township health officers, ... 15
School medical inspectors, ... 25
Local registrars, ... 40
Tuberculosis dispensaries, ... 54
Distributors of antitoxin, ... 78
Abstract of report of county medical inspector, ... 321
Blood-pressure, results of study in 3,754 cases of pulmonary tuberculosis and its complications, ... 784
Bloomsburg:
Typhoid fever, ... 222
Water supply, ... 222
Milk supply, ... 223
Chicken pox, ... 275
Boards of health:
Boroughs lacking, ... 197
Derelict, ... 214
Inactive, ... 199
Local, rules and regulations, ... 194
Powers of, ... 99
Book louse nuisance, ... 277
Borough water supplies, ... 1322
Boroughs lacking boards of health, ... 197

Braddock:
Tuberculosis dispensary, ... 53
Sanitary index, ... 483
Bradford:
Tuberculosis dispensary, ... 58
Sanitary index, ... 483
Bradford County:
County medical inspector, ... 11
County medical deputies, ... 12
Township health officers, ... 15
School medical inspectors, ... 25
Local registrars, ... 40
Tuberculosis dispensary, ... 54
Distributors of antitoxin, ... 78
Abstract of report of county medical inspector, ... 322
Breathing and school inspection, ... 288,302
Bristol:
Tuberculosis dispensary, ... 54
Outbreak of typhoid fever, ... 1374
Brookville:
Tuberculosis dispensary, ... 57
Typhoid fever, ... 224
Water supply, ... 225
Milk supply, ... 226
Brownsville tuberculosis dispensary, ... 56
Bucks County:
County medical inspector, ... 11
Township health officers, ... 15
School medical inspectors, ... 25
Local registrars, ... 40
Tuberculosis dispensary, ... 54
Distributors of antitoxin, ... 78
Abstract of report of county medical inspector, ... 327
Bulletins, Health, ... 98
Bureau of Housing, ... 9,197
Report of, ... 1039
Bureau of Vital Statistics:
General summary, ... 469
Officers of, ... 37
Burials and funerals, ... 99
Burns and scalds, deaths from, ... 508
Butler:
Tuberculosis dispensary, ... 55
Sanitary index, ... 483
Butler County:
County medical inspector, ... 11
County medical deputy, ... 12
Township health officers, ... 15
School medical inspectors, ... 26
Local registrars, ... 41
Tuberculosis dispensary, ... 55
Distributors of antitoxin, ... 78
Abstract of report of county medical inspector, ... 335
Cambria County:
County medical inspector, ... 11
County medical deputies, ... 12
Township health officers, ... 15
School medical inspectors, ... 26
Local registrars, ... 41
Tuberculosis dispensaries, ... 55
Distributors of antitoxin, ... 78
Abstract of report of county medical inspector, ... 337
Cameron County:
County medical inspector, ... 11
Township health officers, ... 16
School medical inspectors, ... 26
Local registrars, ... 41
Tuberculosis dispensary, ... 55
Distributors of antitoxin, ... 79
Abstract of report of county medical inspector, ... 338
Camps, sanitary inspection of, ... 1347
Cancer, death rates from, ... 506
Canonsburg, outbreak of typhoid fever, ... 1380

Carbon County:
County medical inspector, ... 11
Township health officers, ... 16
School medical inspectors, ... 26
Local registrars, ... 41
Tuberculosis dispensaries, ... 55
Distributors of antitoxin, ... 79
Abstract of report of county medical inspectors, ... 339
Carbondale:
Tuberculosis dispensary, ... 57
Sanitary index, ... 484
Carlisle:
Tuberculosis dispensary, ... 56
Sanitary index, ... 484
Carnegie, sanitary index, ... 484
Carrier of typhoid, ... 168
Causes of death, ... 582
Celery, isolation of B. typhosus from celery, ... 744
Centre County:
County medical inspector, ... 11
County medical deputies, ... 12
Township health officers, ... 16
School medical inspectors, ... 27
Local registrars, ... 42
Tuberculosis dispensaries, ... 55
Distributors of antitoxin, ... 79
Abstract of report of county medical inspector, ... 341
Cerebrospinal meningitis, ... 315,393,401
Cervical glands and school inspection, ... 288,302
Chambersburg:
Tuberculosis dispensary 57
Sanitary index, ... 485
Outbreak of typhoid fever, ... 1383
Changes in the staffs, ... 6
Chapels at tuberculosis sanatoria, ... 99
Charitable and philanthropic agencies of Shippensburg, ... 181
Cheltenham township, typhoid fever outbreak, ... 103
Chemical manufacturing process, Clarion River basin, ... 1287
Chemicals used in nitration, ... 1239
Chester:
Tuberculosis dispensary, ... 56
Sanitary index, ... 485
Chester County:
County medical inspector, ... 11
County medical deputies, ... 12
Township health officers, ... 16
School medical inspectors, ... 27
Local registrars, ... 42
Tuberculosis dispensaries, ... 55
Distributors of antitoxin, ... 79
Abstract of report of county medical inspector, ... 343
Chicken pox, 275, 316, 319, 323, 334, 338, 341, 343, 346, 349, 353, 354, 355,376,378, 379, 389, 392, 393, 400, 401, 404, 407, 408, 414, 428, 437, 438, 440, 441, 448,449,451
At Bloomsburg, ... 275
At Duncannon 275
Chlorinated lime, ... 120
Circulars, revision of, ... 210
Circulatory system, diseases of, death rates from, ... 507
Cities, deaths in, ... 582
City water supplies, ... 1320
Clarion, tuberculosis dispensary, ... 55
Clarion County:
County medical inspector, ... 11
County medical deputy, ... 12
Township health officers, ... 16
School medical inspectors, ... 27
Local registrars, ... 42
Tuberculosis dispensary, ... 55
Distributors of antitoxin, ... 79
Abstract of report of county medical inspector, ... 345
Clarion River basin:
Arroyo tannery, ... 1297
Chemical manufacturing process, ... 1287
Clawson Chemical Company, ... 1296
Corbett & Company, ... 1302

Eagle Valley tannery, ... 1300
Industrial waste survey, ... 1279
Industries and industrial wastes, ... 1285
Instanter tannery, ... 1310
James Manufacturing Company, ... 1314
Lackawanna plant (T. H. Quinn & Company), ... 1309
McKean Chemical Company, ... 1313
Millville-Corbett Company, ... 1301
New York and Pennsylvania Company, ... 1303
Otto Chemical Company, ... 1313
Penn Chemical Company, ... 1314
Portland tannery, ... 1298
Quinn & Company (chemical plants), ... 1309
Ridgway tannery, ... 1299
Rolfe tannery, ... 1312
St. Marys tannery 1301
Soda process, ... 1304
Straight Creek plant (T. H. Quinn & Company), ... 1310
Sulphite process, ... 1306
Summary of tannery wastes, ... 1295
Susquehanna plant (T. H. Quinn & Company), ... 1309
Tanning process, ... 1290
Wilcox tannery, ... 1312
Wright Chemical Company, ... 1308
Classificatoin of cases admitted and discharged, tuberculosis dispensaries:
Sex and social conditions, ... 765
Sex and color of cases, ... 765
Sex and age of cases, ... 766
Sex and family history, ... 767
Sex and contacts, ... 767
Social statistics concerning the 11,665 cases admitted and discharged,.. 768,769
Character of dwellings occupied by cases, ... 768
Financial statistics concerning the 11,665 cases admitted and discharged, ... 769
Sex and classification of dispensary cases admitted prior to 1915 and discharged during the year, ... 770
Admitted and discharged during 1915, ... 770
Sex and nativity of cases admitted and discharged during 1915, ... 770
Sex, admission and discharge; classification of cases admitted prior to January 1, 1915, and discharged during 1915, ... 771
Sex, admission and discharge; classification of cases admitted and discharged during 1915, ... 771
Sex, classification and nature of discharges; cases admitted prior to January 1, 1915, and discharged during 1915, ... 772
Sex, classification and nature of discharge of cases admitted and discharged during 1915, ... 772
Sex and number of dispensary visits while under treatment of the cases admitted prior to January 1, 1915, and discharged during 1915, ... 773
Sex and number of dispensary visits of cases admitted and discharged during 1915, ... 774
Sex and dispensary months (time under treatment) for cases admitted prior to January 1, 1915, and discharged during 1915, ... 775
Sex and dispensary months (time under treatment) of cases admitted and discharged during 1915, ... 776
Gain or loss in weight in cases admitted and discharged during 1915,.. 777
Sex and family history of tuberculosis for the cases admitted and discharged during 1915, ... 777
Sex and number of tuberculous relatives of cases giving tuberculous family history among the cases admitted and discharged during 1915, 778
Nativity of patients admitted and discharged during 1915, ... 778
Nativity of patients admitted prior to 1915 and discharged during 1915, ... 778
Summary of patients' history, ... 778
Clawson Chemical Company, ... 1296
"Cleanse the Teeth," a school circular, ... 286
Clearfield, tuberculosis dispensary, ... 55
Clearfield County:
County medical inspector, ... 11
County medical deputy, ... 12
Township health officers. 16
School medical inspectors, ... 27
Local registrars, ... 42
Tuberculosis dispensaries, ... 55
Distributors of antitoxin, ... 79
Diphtheria, ... 252
Abstract of report of county medical inspector, ... 347

Cleversburg dam, ... 178
Clinical observations on poliomyelitis, ... 260
Clinical study, Danville asylum, ... 139

Clinton County:
County medical inspector, ... 11
Township health officers, ... 17
School medical inspectors, ... 27
Local registrars, ... 42
Tuberculosis dispensaries, ... 55
Distributors of antitoxin, ... 79
Abstract of report of county medical inspector, ... 349

Coatesville:
Tuberculosis dispensary, ... 55
Sanitary index, ... 485
Threatened outbreak of typhoid fever, ... 1389
Collegeville, typhoid fever, ... 228

Columbia:
Tuberculosis dispensary, ... 57
Sanitary index, ... 485

Columbia County:
County medical inspector, ... 11
Township health officers, ... 17
School medical inspectors, ... 28
Local registrars, ... 43
Tuberculosis dispensary, ... 55
Distributors of antitoxin, ... 79
Abstract of report of county medical inspector, ... 351
Commissioner, report of, ... 5
Communicable diseases, ... 216,309,647,648,649
Abstracts of reports of county medical inspectors, ... 309
Communicable diseases in hospitals, ... 216
Conferences, ... 96

Connellsville:
Tuberculosis dispensary, ... 56
Sanitary index, ... 486
Control of typhoid fever in Danville, ... 148
Control of typhoid fever, Danville asylum, ... 140
Conventions, ... 96
Corbett & Company, ... 1302
Corporation reports, ... 1052
Corry, tuberculosis dispensary, ... 56
Coudersport, tuberculosis dispensary, ... 60

County death-rate:
By ages, ... 551
By causes, ... 563
County, list of distributors of diphtheria antitoxin, ... 77

County medical inspectors:
Detailed report of work of, ... 463
List of, ... 11
Reports of, ... 309
Field inspections by, ... 216
County registrars, ... 38
County sewers and disposal plants, ... 99
County, tuberculosis dispensaries in, ... 53

Crawford County:
County medical inspector, ... 11
County medical deputy, ... 12
Township health officers, ... 17
School medical inspectors, ... 28
Local registrars, ... 43
Tuberculosis dispensaries, ... 55
Distributors of antitoxin, ... 80
Abstract of report of county medical inspector, ... 352
Cresson, tuberculosis dispensary, ... 55
Cresson Sanatorium, 69,897,904,912,913,965,979,980,981,983,984,986,987,988,989,990
Incidence of tuberculosis in families of 351 former patients of, as traced the last half of 1915, ... 912
Upfollow report of discharged patients in regard to subsequent dispensary attendance, ... 913
Upfollow report of discharged tuberculosis patients in regard to subsequent dispensary attendance, ... 904

Upfollow report of 285 tuberculous patients previously discharged from, ... 897
Table I, ... 979
Table II, ... 980
Table III, ... 981
Table IV, ... 983
Table V, ... 984
Table VI, ... 986
Table VII, ... 987
Table VIII, ... 988
Table IX, ... 989
Table X, ... 990

Cressona, health conditions, ... 420

Cumberland County:
County medical inspector, ... 11
County medical deputy, ... 12
Township health officers, ... 17
School medical inspectors, ... 28
Local registrars, ... 43
Tuberculosis dispensaries, ... 56
Distributors of antitoxin, ... 80
Epidemic of typhoid, ... 171
Typhoid fever, ... 187
Abstract of report of county medical inspector, ... 353

Dairy farms, ... 217

Danville:
Tuberculosis dispensary, ... 59
Typhoid fever outbreak, ... 125
Water supply, ... 129
Typhoid epidemic, ... 141
Water works, ... 142
Sewerage, ... 146
Typhoid fever, ... 147
Control of typhoid fever, ... 148
Epidemiological study of typhoid, ... 151
Milk supply, ... 154
Epidemic treatment of typhoid, ... 157

Danville State Insane Asylum:
Typhoid fever in, ... 125
Clinical summary, ... 139
Control of typhoid fever, ... 140
Epidemiological diagnosis, ... 138
Epidemiological study, ... 134
Milk supply, ... 136
Sewage, ... 130
Recommendations for, ... 132
Water, medical report, ... 136
Water supply of, ... 126

Dauphin County:
County medical inspector, ... 11
Township health officers, ... 17
School medical inspectors, ... 28
Local registrars, ... 43
Tuberculosis dispensaries, ... 56
Distributors of antitoxin, ... 80
Diphtheria, ... 255
Abstract of report of county medical inspector, ... 354

Death rates, ... 471
County, by ages, ... 551
County, by causes, ... 563
From cancer, ... 506
From diphtheria, ... 501
From diseases of the circulatory system, ... 507
From diseases of the digestive system, ... 508
From diseases of the respiratory system, ... 507
From external causes, ... 508
From nervous diseases, ... 507
From nonvenereal diseases of the genitourinary system, ... 508
From scarlet fever, ... 502,503
From tuberculosis (all forms), ... 505
From tuberculosis of the lungs, ... 505
From typhoid fever, ... 500
From whooping cough, ... 504
Per 1,000 of population, corresponding ages, ... 474
Per 1,000 of population, ... 473

Deaths, total, ... 471
Total for certain groups of diseases, ... 472
Other than tuberculosis among dispensary ex-patients before July 1, 1915, ... 868
By months and quarters, ... 471
From burns and scalds, ... 508
From drowning (accidental), ... 508
From gunshot wounds, ... 508
From homicide, ... 508
From injuries in mines, ... 508
From steam railway injuries, ... 508
From suicide, ... 508
In each city having more than 100,000 population from certain specified causes, by age and color:
Philadelphia, ... 583
Pittsburgh, ... 583
Scranton, ... 583
In each city having more than 100,000 population from certain causes, by age and color of decedents:
Philadelphia, ... 607
Pittsburgh, ... 610
Scranton, ... 610
In the entire State and in cities having more than 100,000 population from certain causes, by color, days, weeks and months, for the first year of life:
Philadelphia, ... 600
Pittsburgh, ... 603
Scranton, ... 605
In the entire State and for municipalities having more than 100,000 population from certain causes, by months and color:
Philadelphia, ... 594
Pittsburgh, ... 596
Scranton, ... 598
In the entire State and in each municipality by ages of decedents:

Municipalities.

Allentown, ... 551
Altoona, ... 551
Beaver Falls, ... 551
Bethlehem, ... 551
Braddock, ... 551
Bradford, ... 551
Butler, ... 551
Carbondale, ... 551
Carlisle, ... 551
Carnegie, ... 552
Chambersburg, ... 552
Chester, ... 552
Coatesville, ... 552
Columbia, ... 552
Connellsville, ... 552
DuBois, ... 552
Dunmore, ... 552
Duquesne, ... 552
Easton, ... 552
Erie, ... 552
Farrell, ... 552
Greensburg, ... 552
Harrisburg, ... 552
Hazleton, ... 553
Homestead, ... 553
Johnstown, ... 553
Lancaster, ... 553
Lebanon, ... 553
McKeesport, ... 553
McKees Rocks, ... 553
Mahanoy City, ... 553
Meadville, ... 553
Monessen, ... 553
Mount Carmel, ... 553
Nanticoke, ... 553
New Castle, ... 553
Norristown, ... 553
North Braddock, ... 553
Oil City, ... 553
Old Forge, ... 553
Philadelphia, ... 553

Phoenixville, ... 553
Pittsburgh, ... 553
Pittston, ... 553
Plymouth, ... 553
Pottstown, ... 553
Pottsville, ... 553
Reading, ... 553
Scranton, ... 553
Shamokin, ... 553
Sharon, ... 553
Shenandoah, ... 553
South Bethlehem, ... 553
Steelton, ... 553
Sunbury, ... 554
Uniontown, ... 554
Warren, ... 554
Washington, ... 554
West Chester, ... 554
Wilkes-Barre, ... 554
Wilkinsburg, ... 554
Williamsport, ... 554
York, ... 554

Counties.

Adams County, ... 554
Allegheny County, ... 554
Armstrong County, ... 554
Beaver County, ... 554
Bedford County, ... 554
Berks County, ... 554
Blair, ... 554
Bradford County, ... 554
Bucks County, ... 555
Butler County, ... 555
Cambria County, ... 555
Cameron County, ... 555
Carbon County, ... 555
Centre County, ... 555
Chester County, ... 555
Clarion County, ... 555
Clearfield County, ... 555
Clinton County, ... 555
Columbia County, ... 555
Crawford County, ... 555
Cumberland County, ... 555
Dauphin County, ... 555
Delaware County, ... 555
Elk County, ... 555
Erie County, ... 555
Fayette County, ... 555
Forest County, ... 555
Franklin County, ... 555
Fulton County, ... 555
Greene County, ... 555
Huntingdon County, ... 555
Indiana County, ... 555
Jefferson County, ... 555
Juniata County, ... 555
Lackawanna County, ... 555
Lancaster County, ... 555
Lawrence County, ... 555
Lebanon County, ... 555
Lehigh County, ... 555
Luzerne County, ... 555
Lycoming County, ... 555
McKean County, ... 555
Mercer County, ... 555
Mifflin County, ... 555
Monroe County, ... 555
Montgomery County, ... 555
Montour County, ... 555
Northampton County, ... 555
Northumberland County, ... 555
Perry County, ... 555
Pike County, ... 556
Potter County, ... 556
Schuylkill County, ... 556

Snyder County, ... 556
Somerset County, ... 556
Sullivan County, ... 556
Susquehanna County, ... 556
Tioga County, ... 556
Union County, ... 556
Venango County, ... 556
Warren County, ... 556
Washington County, ... 556
Wayne County, ... 556
Westmoreland County, ... 556
Wyoming County, ... 556
York County, ... 556

In the entire State and in each municipality by color, nativity and parent nativity:

Municipalities.

Allentown, ... 577
Altoona, ... 577
Beaver Falls, ... 577
Bethlehem, ... 577
Braddock, ... 577
Bradford, ... 577
Butler, ... 577
Carbondale, ... 577
Carlisle, ... 577
Carnegie, ... 577
Chambersburg, ... 577
Chester, ... 577
Coatesville, ... 577
Columbia, ... 577
Connellsville, ... 577
DuBois, ... 578
Dunmore, ... 578
Duquesne, ... 578
Easton, ... 578
Erie, ... 578
Farrell, ... 578
Greensburg, ... 578
Harrisburg, ... 578
Hazleton, ... 578
Homestead, ... 578
Johnstown, ... 578
Lancaster, ... 578
Lebanon, ... 578
McKeesport, ... 578
McKees Rocks, ... 578
Mahanoy City, ... 578
Meadville, ... 578
Monessen, ... 578
Mount Carmel, ... 578
Nanticoke, ... 578
New Castle, ... 579
Norristown, ... 579
North Braddock, ... 579
Oil City, ... 579
Old Forge, ... 579
Philadelphia, ... 579
Phoenixville, ... 579
Pittsburgh, ... 579
Pittston, ... 579
Plymouth, ... 579
Pottstown, ... 579
Pottsville, ... 579
Reading, ... 579
Scranton, ... 579
Shamokin, ... 579
Sharon, ... 579
Shenandoah, ... 579
South Bethlehem, ... 579
Steelton, ... 579
Sunbury, ... 579
Uniontown, ... 579
Warren, ... 579
Washington, ... 579
West Chester, ... 579

Wilkes-Barre, ... 579
Wilkinsburg, ... 579
Williamsport, ... 579
York, ... 579

Counties.

Adams County, ... 579
Allegheny County, ... 579
Armstrong County, ... 579
Beaver County 579
Bedford County, ... 579
Berks County, ... 579
Blair County, ... 579
Bradford County, ... 579
Bucks County, ... 579
Butler County, ... 579
Cambria County, ... 580
Cameron County, ... 580
Carbon County, ... 580
Centre County, ... 580
Chester County, ... 580
Clarion County, ... 580
Clearfield County, ... 580
Clinton County, ... 580
Columbia County, ... 580
Crawford County, ... 580
Cumberland County, ... 580
Dauphin County, ... 580
Delaware County, ... 580
Elk County, ... 580
Erie County, ... 580
Fayette County, ... 580
Forest County, ... 580
Franklin County, ... 580
Fulton County, ... 580
Greene County, ... 580
Huntingdon County, ... 581
Indiana County, ... 581
Jefferson County, ... 581
Juniata County, ... 581
Lackawanna County, ... 581
Lancaster County, ... 581
Lawrence County, ... 581
Lebanon County, ... 581
Lehigh County, ... 581
Luzerne County, ... 581
Lycoming County, ... 581
McKean County, ... 581
Mercer County, ... 581
Mifflin County, ... 581
Monroe County, ... 581
Montgomery County, ... 581
Montour County, ... 581
Northampton County, ... 581
Northumberland County, ... 581
Perry County, ... 581
Pike County, ... 581
Potter County, ... 581
Schuylkill County, ... 581
Snyder County, ... 581
Somerset County, ... 581
Sullivan County, ... 581
Susquehanna County, ... 581
Tioga County, ... 581
Union County, ... 581
Venango County, ... 581
Warren County, ... 581
Washington County, ... 581
Wayne County, ... 581
Westmoreland County, ... 581
Wyoming County, ... 581
York County, ... 581

In the entire State and in each municipality from certain specified causes:

Municipalities.

Allentown, ... 563
Altoona, ... 563

Beaver Falls, ... 563
Bethlehem, ... 563
Braddock, ... 563
Bradford, ... 564
Butler, ... 564
Carbondale, ... 564
Carlisle, ... 564
Carnegie, ... 564
Chambersburg, ... 564
Chester, ... 564
Coatesville, ... 564
Columbia, ... 564
Connellsville, ... 564
DuBois, ... 564
Dunmore, ... 564
Duquesne, ... 565
Easton, ... 565
Erie, ... 565
Farrell, ... 565
Greensburg, ... 565
Harrisburg, ... 565
Hazleton, ... 565
Homestead, ... 565
Johnstown, ... 565
Lancaster, ... 565
Lebanon, ... 565
McKeesport, ... 565
McKees Rocks, ... 565
Mahanoy City, ... 565
Meadville, ... 565
Monessen, ... 565
Mount Carmel, ... 565
Nanticoke, ... 565
New Castle, ... 565
Norristown, ... 565
North Braddock, ... 565
Oil City, ... 565
Old Forge, ... 565
Philadelphia, ... 565
Phoenixville, ... 565
Pittsburgh, ... 565
Pittston, ... 565
Plymouth, ... 565
Pottstown, ... 565
Pottsville, ... 565
Reading, ... 565
Scranton, ... 565
Shamokin, ... 565
Sharon, ... 566
Shenandoah, ... 566
South Bethlehem, ... 566
Steelton, ... 566
Sunbury, ... 566
Uniontown, ... 566
Warren, ... 566
Washington, ... 566
West Chester, ... 566
Wilkes-Barre, ... 567
Wilkinsburg, ... 567
Williamsport, ... 567
York, ... 567

Counties.

Adams County, ... 567
Allegheny County, ... 567
Armstrong County, ... 567
Beaver County, ... 567
Bedford County, ... 567
Berks County, ... 567
Blair County, ... 567
Bradford County, ... 567
Bucks County, ... 567
Butler County, ... 567
Cambria County, ... 567
Cameron County, ... 567
Carbon County, ... 567

Centre County, ... 567
Chester County, ... 567
Clarion County, ... 567
Clearfield County, ... 567
Clinton County, ... 567
Columbia County, ... 567
Crawford County, ... 567
Cumberland County, ... 567
Dauphin County, ... 567
Delaware County, ... 567
Elk County, ... 567
Erie County, ... 567
Fayette County, ... 568
Forest County, ... 568
Franklin County, ... 568
Fulton County, ... 568
Greene County, ... 568
Huntingdon County, ... 568
Indiana County, ... 568
Jefferson County, ... 568
Juniata County, ... 568
Lackawanna County, ... 568
Lancaster County, ... 568
Lawrence County, ... 568
Lebanon County, ... 568
Lehigh County, ... 568
Luzerne County, ... 568
Lycoming County, ... 568
McKean County, ... 568
Mercer County, ... 568
Mifflin County, ... 568
Monroe County, ... 568
Montgomery County, ... 568
Montour County, ... 568
Northampton County, ... 568
Northumberland County, ... 568
Perry County, ... 568
Pike County, ... 569
Potter County, ... 569
Schuylkill County, ... 569
Snyder County, ... 569
Somerset County, ... 569
Sullivan County, ... 569
Susquehanna County, ... 569
Tioga County, ... 569
Union County, ... 569
Venango County, ... 569
Warren County, ... 569
Washington County, ... 569
Wayne County, ... 569
Westmoreland County, ... 569
Wyoming County, ... 569
York County, ... 569

In the entire State from each cause, table of:

All causes, ... 517,534
General diseases, ... 517,534
Diseases of the nervous system and of the organs of special sense, ... 521,538
Diseases of the circulatory system, ... 523,539
Diseases of the respiratory system, ... 523,540
Diseases of the digestive system, ... 525,541
Nonvenereal diseases of the genitourinary system and anexa, ... 526,543
The puerperal state, ... 527,544
Diseases of the sikn and of the cellular tissue, ... 528,545
Diseases of the bones and of the organs of locomotion, ... 528,545
Malformations, ... 529,545
Early infancy, ... 529,546
Old age, ... 529,546
External causes, ... 530,546
Ill-defined, ... 533,549
Tuberculosis, total, ... 519,536
Cancer and other malignant tumors, total, ... 520,537
Meningitis, total, ... 521,538
Suicide, total, ... 530,547
Accidental or undefined, total, ... 530,547
Poisoning by food, ... 531,547

Other acute poisonings, ... 531,547
Conflagration, ... 531,547
Burns (conflagration excepted), ... 531,547
Gases, ... 531,547
Drowning, accidental, ... 531,547
Traumatism, ... 531,548
Starvation, ... 532,549
Cold, excessive, ... 532,549
Heat, effects of, ... 532,549
Lightning, ... 532,549
Electricity (lightning excepted), ... 532,549
Fractures, ... 532,549
External violence, ... 532,549
Homicide, total, ... 532,549
Sudden death, ... 533,549
Not specified, ... 533,549
From all causes, table of, giving municipalities:
Entire State, ... 510
Total all municipalities having more than 5,000 population, ... 510
Total all municipalities having less than 5,000 population, ... 510
Total rural (exclusive of all municipalities), ... 510
Deaths, births, marriages and diseases, registration of, ... 99
Deaths of Department officers, ... 6
Deceased employes, ... 91
Decrees and permits, water works and filtration, issued by the Commissioners of Health, ... 1070
Detailed tables and data, ... 1072-1184
Defects, tabluation of school inspection, ... 288,301,304
Deformities and school inspection, ... 289,302
Delaware County:—
County medical inspector, ... 11
County medical deputies, ... 12
Township health officers, ... 17
School medical inspectors, ... 28
Local registrars, ... 43
Tuberculosis dispensary, ... 56
Distributors of antitoxin, ... 80
Abstract of report of county medical inspector, ... 355
Deputies, medical, ... 12
Derelict boards of health, ... 214
Design and construction section, ... 1236
Dickson City, alleged smallpox cases, ... 264
Digestive system, diseases of, death rates from, ... 508
Diphtheria, 209, 218, 241, 244, 252, 255, 256, 316, 319, 323, 331, 338, 343, 346, 347, 350, 353, 354, 355, 356, 365, 370, 376, 378, 380, 388, 392, 392, 396, 397, 399, 401, 402, 407, 408, 409, 413, 416, 425, 427, 437, 440, 441, 447, 449, 452, 457, 501, 654, 655
By color and age periods, ... 655
By nativity and age periods, ... 655
By nativity and sex, ... 655
By sex and color, ... 655
Comparison of cases reported by months for the years 1906 to 1915, inclusive, ... 654
Death rates from, ... 501
Distribution of by age periods, State, urban and rural, and percentage of each age to total cases in each locality, ... 654
Under other diagnoses, ... 256
At DuBois, ... 209, 252
In the Lykens Valley, ... 255
In Glen Mills schools, ... 356
In Oak Run school district, ... 241
In Sunbury, ... 244
Diphtheria antitoxin, ... 1019
Summary of data:
Table I, ... 1024
Table II, ... 1025
Table III, ... 1026
Table IV, ... 1027
Table V, ... 1028
Table VI, ... 1029
Table VII, ... 1029
Table VIII, ... 1029
Diseases:
Communicable, ... 647, 648, 649

Diseases:
Death rates per 1,000,000 of population, ... 473
Total deaths for certain groups of, ... 472
Diseases, births, deaths and marriages, registration of, ... 99
Disinfection, schools closed for, ... 417
Dispensaries (tuberculosis), ... 53
Additional upfollow notes on former tuberculosis dispensary patients, 869
Classification of cases admitted and discharged:
Sex and social conditions, ... 765
Sex and color of cases, ... 765
Sex and age of cases, ... 766
Sex and family history, ... 767
Sex and contacts, ... 767
Social statistics concerning the 11,665 cases admitted and discharged, ... 768,769
Character of dwellings occupied by cases, ... 768
Financial statistics concerning the 11,665 cases admitted and discharged, ... 769
Sex and classification of dispensary cases admitted prior to 1915, and discharged during the year, ... 770
Admitted and discharged during 1915, ... 770
Sex and nativity of cases admitted and discharged during 1915,.. 770
Sex, admission and discharge; classification of cases admitted prior to January 1, 1915, and discharged during 1915, ... 771
Sex, admission and discharge; classification of cases admitted and discharged during 1915, ... 771
Sex, classification and nature of discharge; cases admitted prior to January 1, 1915, and discharged during 1915, ... 772
Sex, classification and nature of discharge of cases admitted and discharged during 1915, ... 772
Sex and number of dispensary visits while under treatment of the cases admitted prior to January 1, 1915, and discharged during 1915, ... 773
Sex and number of dispensary visits of cases admitted and discharged during 1915, ... 774
Sex and dispensary months (time under treatment) for cases admitted prior to January 1, 1915, and discharged during 1915,.. 775
Sex and dispensary months (time under treatment) of cases admitted and discharged during 1915, ... 776
Gain or loss in weight in cases admitted and discharged during 1915, ... 777
Sex and family history of tuberculosis for the cases admitted and discharged during 1915, ... 777
Sex and number of tuberculous relatives of cases giving tuberculosis family history among the cases admitted and discharged during 1915, ... 778
Nativity of patients admitted and discharged during 1915, ... 778
Nativity of patients admitted prior to 1915, and discharged during 1915, ... 778
Summary of patients' history, ... 778
Deaths other than tuberculosis among dispensary ex-patients before July 1, 1915, ... 868
Detailed list of tuberculous patients admitted and discharged, by sex, occupation and nativity, ... 791
Locations of, ... 53
Occupations and nativity of all patients who were discharged regardless of date of admission, ... 791
Subdivision of, general report of, ... 751
Upfollow of former patients of the tuberculosis dispensaries and sanatoria, ... 800
Vital statistics of, ... 751
Dispensary (tuberculosis):
Nurses, ... 7
Operations, table of, ... 762
Physicians, ... 7
Summary of work by months, ... 764
Disposal plants, county sewers, ... 99
Division of Accounting and Purchasing:
Report of, ... 1493
General fund, item No. 1—
Receipts, ... 1496
Disbursements, ... 1496
Summary, ... 1497

General fund, item No. 2—
Receipts, ... 1497
Disbursements:
Medical division, ... 1497
Miscellaneous expenditures, ... 1497
Engineering division, ... 1498
Division of vital, morbidity and marriage statistics, ... 1498
General expenses, ... 1498
Summary, ... 1498
Tuberculosis fund, item No. 3—
Receipts, ... 1499
Disbursements:
Dispensaries, ... 1500
Mont Alto sanatorium, ... 1500
Cresson sanatorium, ... 1500
Hamburg sanatorium, ... 1501
Summary, ... 1501
Unfinished contracts, ... 1502
Returned to the State Treasurer, ... 1502
Medical school inspection fund, item No. 4—
Receipts, ... 1502
Disbursements, ... 1503
Summary, ... 1503
General fund:
Medical division, ... 1505
Miscellaneous expenditures, ... 1506
Engineering division, ... 1506
Division of vital, morbidity and marriage statistics, ... 1506
Tuberculosis fund:
Dispensaries, ... 1507
Act No. 316, session of 1913:
Boroughs and townships, ... 1508
Mont Alto sanatorium, ... 1508
Cresson sanatorium, ... 1508
Hamburg sanatorium, ... 1509
Summary, ... 1509
Deficiency fund, ... 1510
Medical school inspection fund, ... 1511
Housing division, ... 1511
Panama-Pacific International Exposition fund, ... 1512
Grand summary, ... 1512
Division for the control of tuberculosis, officers of, ... 749
Division of distribution of biological products, ... 1017
Division of medical inspection, ... 205
Personnel of, ... 10
Division of public service, ... 195
Division of sanitary engineering, organization of, ... 1050
Report of, ... 1047
Division of supplies, ... 1517
Report of, ... 1515
Dixon, Samuel G.:
Address at the laying of the corner-stone of the Children's Building of the Hospital of the Tuberculosis League, Pittsburgh, ... 97
Letter of transmittal; report, ... 3
"The Sanitary Engineer in Public Health Work," 96
Dixon's Fluid, ... 755
Report of treatment of tuberculosis with in dispensaries in 1915, ... 779
Results obtained with the use of the biological products of the tubercle bacillus (suspension of dead tubercle bacilli, and extract of tubercle bacilli, or "Dixon's Fluid"), ... 944
Donations (tuberculosis dispensaries), ... 761,953,976,1012
Doylestown, tuberculosis dispensary, ... 54
Draughting, ... 1061
Drowning (accidental), deaths from, ... 508
DuBois:
Tuberculosis dispensary, ... 55
Diphtheria, ... 209,252
Sanitary index, ... 486
Duncannon, chicken pox, ... 275
Dunmore, sanitary index, ... 486
Duquesne, sanitary index, ... 487
Dushore, tuberculosis dispensary, ... 60
Dysentery, epidemic, ... 379
Outbreak at Everson, ... 1396

Eagle Valley tannery, ... 1309
Earlston, outbreak of typhoid fever, ... 1394
Easton:
Tuberculosis dispensary, ... 59
Sanitary index, ... 487
Eating houses, public, regulation of, ... 195
Echthyma, ... 428
Elk County:
County medical inspector, ... 11
County medical deputy, ... 12
Township health officers, ... 18
School medical inspectors, ... 29
Local registrars, ... 44
Tuberculosis dispensary, ... 56
Distributors of antitoxin, ... 80
Typhoid fever, ... 230
Abstract of report of county medical inspector, ... 363
Employes, deceased, ... 91
Employes in hotels and restaurants, ... 91
Emporium, tuberculosis dispensary, ... 55
Engineering, sanitary:
Division of, ... 86
Report of, ... 1047
Organization, ... 1050
Engineers appointed, ... 8
Epidemic history, ... 92
Epidemic treatment, typhoid fever in Danville, ... 157
Epidemics, ... 1357
Diphtheria, ... 92, 356
Diphtheria, Glen Mills schools, ... 356
Dysentery, ... 379
Scarlet fever, Hazlehurst, ... 398
Typhoid, ... 92
Typhoid fever, Newport, Perry County, ... 159
Typhoid, remedial measures, ... 118
Typhoid, Shippensburg, ... 171, 190
Epidemiological diagnosis, Danville asylum, ... 138
Epidemiological study of typhoid in Danville, ... 151
Epidemiological study, Danville asylum, ... 134
Erie:
Tuberculosis dispensary, ... 56
Infantile paralysis, ... 209
Poliomyelitis, ... 256
Sanitary index, ... 487
Flood disaster, ... 1267
Erie County:
County medical inspector, ... 11
Township health officers, ... 18
School medical inspectors, ... 29
Local registrars, ... 44
Tuberculosis dispensaries, ... 56
Distributors of antitoxin, ... 80
Poliomyelitis, ... 257
Abstract of report of county medical inspector, ... 363
Erysipelas, 316, 324, 341, 343, 347, 366, 380, 389, 392, 393, 400, 402, 425, 437, 440, 441, 448, 450, 451, 461
Everett:
Tuberculosis dispensary, ... 54
Outbreak of typhoid fever, ... 1390
Everson, outbreak of dysentery, ... 1396
Examinations in laboratories. See also Laboratories.
Water, ... 674
Milk, ... 678
Exhibit, tuberculosis, ... 793
Exhibits, health, summary of, ... 795
Experimental station, division of laboratories, personnel of, ... 52
Exposition, Pan-American, ... 94
Exposition, Panama-Pacific International, ... 94
External causes, death rates from, ... 508
Eyes, infants, reports of midwives on, ... 210

Fair grounds, sanitary inspection of, ... 1347
Fayette County:
County medical inspector, ... 11
County medical deputies, ... 12
Township health officers, ... 18
School medical inspectors, ... 29
Local registrars, ... 44
Tuberculosis dispensaries, ... 56
Distributors of antitoxin, ... 80
Abstract of report of county medical inspector, ... 369
Field work, medical inspection, ... 208
Filter designs made the subjects of permits or decrees, ... 1177
Tables on, ... 1179
Filtration:
Chemicals used in, ... 1239
Instructive information concerning water, filtration in Pennsylvania, 1252
Permits and decrees issued by the Commissioner of Health, ... 1070
Detailed tables and data, ... 1072-1184
Plants, ... 1237
Table of, ... 1240
Fixation tests, ... 94
Flood, Erie disaster, ... 1267
Foods:
Care of, ... 91
Protection of, ... 215
Forest County:
County medical inspector, ... 11
County medical deputy, ... 12
Township health officers, ... 18
School medical inspectors, ... 29
Local registrars, ... 44
Tuberculosis dispensaries, ... 57
Distributors of antitoxin, ... 80
Abstract of report of county medical inspector, ... 372
Fourth class school districts, inspection in, ... 281
Frackville, health conditions, ... 419
Franklin, tuberculosis dispensary, ... 60
Franklin County:
County medical inspector, ... 11
County medical deputies, ... 13
Township health officers, ... 18
School medical inspectors, ... 29
Local registrars, ... 44
Tuberculosis dispensaries, ... 57
Distributors of antitoxin, ... 81
Abstract of report of county medical inspector, ... 372
Frick, H. C., Coke Company, ... 369
Frogtown, typhoid fever, ... 227
Fulton County:
County medical inspector, ... 11
Township health officers, ... 18
School medical inspectors, ... 29
Local registrars, ... 45
Tuberculosis dispensary, ... 57
Distributors of antitoxin, ... 81
Abstract of report of county medical inspector, ... 373
Funerals and burials, ... 99

Gallitzin, outbreak of typhoid fever, ... 1399
Gas works waste pollution, elimination of on the Schuylkill River, ... 1317
General division, personnel of, ... 9
General inspector, report of, ... 194
General mortality tables, ... 509
Genitourinary system, nonvenereal diseases of, death rates from, ... 508
German measles, ... 316,425,448
Gettysburg, tuberculosis dispensary, ... 53
Gettysburg College, scarlet fever, ... 209,268
Girardville, health conditions, ... 418
Glen Mills schools, diphtheria epidemic, ... 356
Greene County:
County medical inspector, ... 11
County medical deputies, ... 13
Township health officers, ... 18
School medical inspectors, ... 29
Local registrars, ... 45
Tuberculosis dispensary, ... 57
Distributors of antitoxin, ... 81
Abstract of report of county medical inspector, ... 375

Greensburg:
Tuberculosis dispensary, ... 61
Sanitary index, ... 487
Groups:
Death rates per 100,000 of population, ... 473
Total death rates for of certain diseases, ... 472
Various rates of each, sanitary index, ... 482
Gunshot wounds (accidental), deaths from, ... 508
Guthrie, George W., ... 5

Hamburg:
Tuberculosis dispensary, ... 54
Outbreak of typhoid fever, ... 1403
Hamburg sanatorium, 8, 73, 924, 929, 930, 994, 995, 997, 999, 1000, 1002, 1004, 1005, 1006, 1007, 1008, 1009
Incidence of tuberculosis in families of 173 former patients of, as treated the last half of 1915, ... 929
Occupations of patients discharged from, in 1915, ... 1009
Operations in 1915, ... 1008
Upfollow report of discharged tuberculosis patients of, in regard to subsequent dispensary attendance, ... 930
Upfollow report of 173 patients previously discharged from, ... 924
Table I, ... 994
Table II, ... 995
Table III, ... 997
Table IV, ... 999
Table V, ... 1000
Table VI, ... 1002
Table VII, ... 1004
Table VIII, ... 1005
Table IX, ... 1006
Table IX-A, ... 1007
Hanover, tuberculosis dispensary, ... 61
Harrisburg:
Tuberculosis dispensary, ... 56
Sanitary index, ... 488
Harrison Day Nursery, ... 117
Hastings, tuberculosis dispensary, ... 55
Hazlehurst, epidemic of scarlet fever, ... 398
Hazleton:
Tuberculosis dispensary, ... 58
Sanitary index, ... 488
Health Bulletins, ... 98
Health exhibits, summary of, ... 796
Health legislation, ... 99
Health officers, ... 14
Summary of reports of, ... 466
Hearing and school inspection, ... 288,301
History of epidemic, ... 92
Home Water Company, ... 162
Homestead:
Tuberculosis dispensary, ... 53
Sanitary index, ... 488
Homicide, deaths from, ... 508
Honesdale, tuberculosis dispensary, ... 60
Hospitals and sanatoria, maintenance of inmates, ... 99
Hospitals, communicable diseases in, ... 216
Hotels and public eating houses, regulation of, ... 195
Hotels, employes in, ... 91
Hotels, restaurants, etc., regulating sanitary conditions, ... 99
Housing, bureau of, ... 94,197
Housing, report on, ... 1041
Huntingdon, tuberculosis dispensary, ... 57
Huntingdon County:
County medical inspector, ... 11
County medical deputy, ... 13
Township health officers, ... 18
School medical inspectors, ... 29
Local registrars, ... 45
Tuberculosis dispensary, ... 57
Distributors of antitoxin, ... 81
Abstract of report of county medical inspector, ... 377

Immunization, typhoid, ... 188
Immunized, pregnant women, typhoid, ... 189
Impetigo contagiosa, ... 316, 323, 341, 347, 426, 428, 442, 450
Inactive boards of health, ... 199

Incidence of tuberculosis in families of 351 former patients of the State sanatorium at Cresson as traced the last half of 1915, ... 912
Incidence of tuberculosis in families of 173 former patients of the State sanatorium at Hamburg as traced the last half of 1915, ... 929
Incidence of tuberculosis in families of 974 former patients of the State sanatroium at Mont Alto as traced the first half of 1915, ... 877
Additional upfollow notes on ex-patients in this series, ... 878
Incidence of tuberculosis in families of 1,294 patients of the State sanatorium at Mont Alto as traced the last half of 1915, ... 886
Indebtedness of municipalities, ... 99
Index, sanitary, ... 475
Percentage decrease, ... 479
Residual rates, increase or decrease, ... 479
Various rates of each place and group, ... 482
Indiana, tuberculosis dispensary, ... 57
Indiana County:
County medical inspector, ... 11
County medical deputies, ... 13
Township health officers, ... 18
School medical inspectors, ... 30
Local registrars, ... 45
Tuberculosis dispensary, ... 57
Distributors of antitoxin, ... 81
Abstract of report of county medical inspector, ... 379
Indigent residents, ... 99
Industrial waste survey of the Clarion River basin, ... 1279
Industrial water supplies, ... 1337
Industries and industrial wastes, Clarion River basin, ... 1285
Infant welfare work, ... 210
Infantile paralysis (see also Poliomyelitis), ... 209,325
Erie, ... 209
Injuries in mines, deaths from, ... 508
Inspection:
Division of medical, ... 205
Medical, administrative work, ... 208
Medical, third-class school districts, ... 300
Organization of division of medical, ... 207
Sanitary, school buildings, tabulated data, ... 297
Sanitary, school buildings and grounds, ... 295
School, medical, ... 281
School, medical, statistics of, ... 288
School, medical, third-class districts, statistics of, ... 301
School, tables on, ... 290
School, tabulation by defects, ... 288,301
School, tabulation of defects, ... 304
Schools, ... 197
Special, ... 202
Statistics on school, ... 283
Tuberculosis dispensaries, ... 757
Inspector, general, report of, ... 194
Inspectors:
County medical, ... 11
County medical, field investigations by, ... 216
Medical, county, reports of, ... 309
Railroad medical, ... 13
School medical, ... 24
Instanter tannery, ... 1310
Institution water supplies, ... 1337

James Chemical Company, ... 1314
Jeannette, outbreak of typhoid fever, ... 1405
Jefferson County:
County medical inspector, ... 11
Township health officers, ... 19
School medical inspectors, ... 30
Local registrars, ... 45
Tuberculosis dispensaries, ... 57
Distributors of antitoxin, ... 81
Typhoid fever, ... 224
Typhoid fever, ... 227
Abstract of report of county medical inspector, ... 382
Jenkintown:
Tuberculosis dispensary, ... 58
Typhoid fever outbreak, ... 103
Jessup, smallpox, ... 209,265
Johnson, Fred C., M. D., medical director, Pennsylvania State sanatorium for tuberculosis No. 1, Mont Alto, report of, ... 936

Johnsonburg, outbreak of typhoid fever, ... 1415
Johnstown:
Tuberculosis dispensary, ... 55
Sanitary index, ... 489
Outbreak of typhoid fever, ... 1417
Juniata County:
County medical inspector, ... 11
County medical deputy, ... 13
Township health officers, ... 19
School medical inspectors, ... 30
Local registrars, ... 45
Tuberculosis dispensary, ... 57
Distributors of antitoxin, ... 81
Abstract of report of county medical inspctor, ... 384

Kane, tuberculosis dispensary, ... 58
Kittanning:
Tuberculosis dispensary, ... 54
Smallpox, ... 209
Operation of the water filtration plant of the Armstrong Water Company, ... 1316
Kutztown, outbreak of typhoid fever, ... 1427

Laboratories:
Division of, personnel of, ... 52
Report of, ... 673
Examinations in:
Malaria, ... 679
Widal reaction, ... 679
Sputum for tubercle bacilli, ... 679
Urine, ... 679
Pathological fluids, ... 680
Pathological tissues and morbid growths, ... 680
Feces, ... 680
Miscellaneous, ... 680
Laboratory research in poliomyelitis, ... 261
Lackawanna County:
County medical inspector, ... 11
County medical deputy, ... 13
Township health officers, ... 19
School medical inspectors, ... 30
Local registrars, ... 45
Tuberculosis dispensaries, ... 57
Distributors of antitoxin, ... 81
Oak Run school district, ... 209
Smallpox, mild type, ... 215
Smallpox, ... 265
Abstract of report of county medical inspector, ... 385
Lackawanna plant (T. H. Quinn & Company), ... 1309
Lancaster, tuberculosis dispensary, ... 57
Lancaster County:
County medical inspector, ... 11
County medical deputies, ... 13
Township health officers, ... 19
School medical inspectors, ... 31
Local registrars, ... 46
Tuberculosis dispensaries, ... 57
Distributors of antitoxin, ... 82
Abstract of report of county medical inspector, ... 388
Sanitary index, ... 489
Lansford, tuberculosis dispensary, ... 55
Laryngologist, monthly report of, tuberculosis, ... 788
Laryngologist, report of, tuberculosis, ... 787
Lawrence County:
County medical inspector, ... 11
County medical deputy, ... 13
Township health officers, ... 19
School medical inspectors, ... 31
Local registrars, ... 46
Tuberculosis dispensary, ... 57
Distributors of antitoxin, ... 82
Abstract of report of county medical inspector, ... 389
Lebanon, tuberculosis dispensary, ... 57

Lebanon County:
County medical inspector, ... 11
County medical deputies, ... 13
Township health officers, ... 19
School medical inspectors, ... 31
Local registrars, ... 46
Tuberculosis dispensary, ... 57
Distributors of antitoxin, ... 82
Abstract of report of county medical inspector, ... 391
Sanitary index, ... 489
Legal cases by counties referred previous to January 1, 1915, closed during 1915, ... 1485
Legislation, health, ... 99
Lehigh County:
County medical inspector, ... 11
Township health officers, ... 20
School medical inspectors, ... 31
Local registrars, ... 46
Tuberculosis dispensary, ... 58
Distributors of antitoxin, ... 82
Abstract of report of county medical inspector, ... 391
Lehighton, scarlet fever, ... 270
Leprosy, ... 221
Letter of transmittal, ... 3
Lewistown:
Tuberculosis dispensary, ... 58
Typhoid fever, ... 231
Milk supply, ... 232
Water supply, ... 232
Outbreak of typhoid fever, ... 1430
List of officers and agents, ... 9
Lititz, outbreak of typhoid fever, ... 1434
Local boards of health, rules and regulations, ... 194
Lock Haven, tuberculosis dispensary, ... 55
Luzerne County:
County medical inspector, ... 11
County medical deputies, ... 13
Township health officers, ... 20
School medical inspectors, ... 31
Local registrars, ... 46
Tuberculosis dispensaries, ... 58
Distributors of antitoxin, ... 82
Abstract of report of county medical inspector, ... 393
Lycoming County:
County medical inspector, ... 11
County medical deputy, ... 13
Township health officers, ... 20
School medical inspectors, ... 32
Local registrars, ... 47
Tuberculosis dispensary, ... 58
Distributors of antitoxin, ... 82
Diphtheria, ... 241
Abstract of report of county medical inspector, ... 397
Lykens, tuberculosis dispensary, ... 56
Lykens Valley, diphtheria in, ... 255

McConnellsburg, tuberculosis dispensary, ... 57
McKean Chemical Company, ... 1313
McKean County:
County medical inspector, ... 11
Township health officers, ... 20
School medical inspectors, ... 32
Local registrars, ... 47
Tuberculosis dispensaries, ... 58
Distributors of antitoxin, ... 83
Abstract of report of county medical inspector, ... 398
McKeesport:
Tuberculosis dispensary, ... 53
Sanitary index, ... 490
McKees Rocks, sanitary index, ... 489
Mahanoy City, sanitary index, ... 490
Maintenance of inmates of hospitals and sanatoria, ... 99
Major watersheds, summary of sanitary field inspection for the year 1915, classified according to the major watersheds of the State, ... 1346
Malarial fever, ... 325
Malnutrition and school inspection, ... 289,302
Marriage license law, ... 99

Marriage tables:
No. 1, ... 664
No. 2, ... 667
No. 3, ... 668
No. 4, ... 668
No. 5, ... 669
No. 6, ... 669
No. 7, ... 669
Marriages, ... 99,663,664,667,668,669
In the entire State and for each county by month of marriage, ... 664
By ages and nativity of brides and grooms for the year 1915, ... 668
Dissolution of prior marriages by ages of brides and grooms, ... 669
Number of persons married per 1,000 of population by counties for each year of the ten-year period 1906-1915, inclusive, ... 667
Percentage of brides and grooms for first marriages in each age period on the total for the year at all ages, ... 668
Percentage of marriages in each month of the year based on the total yearly marriages for the ten-year period 1906-1915, inclusive, ... 669
Marriages and re-marriages by ages of brides and grooms, ... 669
Marriages, births, deaths and diseases, registration of, ... 99
Marshwood, smallpox, ... 265
Mattress Act, ... 99
Mauch Chunk, tuberculosis dispensary, ... 55
Mausoleums, construction of, ... 99
Meadville:
Tuberculosis dispensary, ... 56
Sanitary index, ... 490
Measles, 218, 316, 319, 324, 333, 338, 344, 346, 353, 355, 365, 376, 380, 389, 392, 393, 400, 401, 402, 404, 407, 409, 415, 425, 427, 437, 438, 439, 442, 448, 449, 451, 461, 503
Death rates from, ... 503
Medical, county, inspectors, field investigations by, ... 216
Medical deputies, list of, ... 12
Medical inspection:
Administrative work, ... 208
Division of, ... 205
Field work, ... 208
Organization division of, ... 207
Personnel of division of, ... 10
School, ... 281
Statistics of school, ... 288
Third-class school districts, ... 300
Medical school inspection, third-class districts, statistics of, ... 301
Medical inspectors, county, reports of, ... 309
Meningitis, ... 442
Mercer County:
County medical inspector, ... 12
Township health officers, ... 20
School medical inspectors, ... 32
Local registrars, ... 47
Tuberculosis dispensary, ... 58
Distributors of antitoxin, ... 82
Abstract of report of county medical inspector, ... 399
Meteorological conditions and poliomyelitis, ... 260
Metropolitan Life Insurance Company, ... 93
Meyersdale, tuberculosis dispensary, ... 60
Midwives, reports on eyes of infants, ... 210
Mifflin County:
County medical inspector, ... 12
Township health officers, ... 20
School medical inspectors, ... 32
Local registrars, ... 47
Tuberculosis dispensary, ... 58
Distributors of antitoxin, ... 82
Typhoid fever, ... 231
Abstract of report of county medical inspector, ... 400
Mifflinburg, tuberculosis dispensary, ... 60
Mifflintown, tuberculosis dispensary, ... 57
Milford, tuberculosis dispensary, ... 59
Milk, examinations in laboratory, ... 678

Milk supply:
Bloomsburg, ... 223
Brookville, ... 226
Danville, ... 154
Danville asylum, ... 136
Jenkintown, ... 104
Lewistown, ... 232
Newport, ... 164
Shippensburg, ... 185
Millville-Corbett Company, ... 1301
Milton, tuberculosis dispensary, ... 59
Mines, injuries in, deaths from, ... 508
Minor watersheds, summary of survey of certain, ... 1341
Miscellaneous affections and school inspection, ... 289,302
Monessen:
Tuberculosis dispensary, ... 61
Sanitary index, ... 491
Monongahela, tuberculosis dispensary, ... 60
Monroe County:
County medical inspector, ... 12
County medical deputy, ... 13
Township health officers, ... 20
School medical inspectors, ... 32
Local registrars, ... 47
Tuberculosis dispensary, ... 58
Distributors of antitoxin, ... 83
Abstract of report of county medical inspector, ... 401
Mont Alto sanatorium, ...8, 61, 889, 954, 955, 956, 957, 958, 960, 962, 963, 964
Incidence of tuberculosis in families of 1,294 patients of, as traced the last half of 1915, ... 889
Upfollow January 1, 1915, to July 1, 1915, of former patients of, grouped according to original admission classification, and by sex, color, social condition and age, and a comparison of occupation and income before admission and as upfollowed, ... 889
Table I, ... 954
Table II, ... 955
Table III, ... 956
Table IV, ... 957
Table V, ... 958
Table VI, ... 960
Table VII, ... 962
Table VIII, ... 963
Table IX, ... 964
Montgomery County:
County medical inspector, ... 12
County medical deputies, ... 13
Township health officers, ... 20
School medical inspectors, ... 33
Local registrars, ... 48
Tuberculosis dispensaries, ... 58
Distributors of antitoxin, ... 83
Typhoid fever outbreak, ... 103
Typhoid fever, ... 112
Abstract of report of county medical inspector, ... 402
Montour County:
County medical inspector, ... 12
Township health officers, ... 21
School medical inspectors, ... 33
Local registrars, ... 48
Tuberculosis dispensary, ... 59
Distributors of antitoxin, ... 83
Abstract of report of county medical inspector, ... 404
Montrose, tuberculosis dispensary, ... 60
Morbidity in Sunbury, ... 251
Morbidity reports, Sunbury, ... 247
Morbidity tables:
No. 1. Total cases of communicable diseases reported during the years 1906 to 1915, inclusive, ... 648
No. 2. Communicable diseases reported in 1915 by months, total, urban and rural, ... 649
No. 3. Comparison of cases reported by months for the years 1906 to 1915, inclusive, ... 652
No. 4. Typhoid fever, distribution of by age periods, State, urban and rural, and percentages at each age to total cases of each locality, ... 653

No. 5. Typhoid fever by nativity and age periods, ... 653
No. 6. Typhoid fever by color and age periods, ... 653
No. 7. Typhoid fever by sex and color, ... 654
No. 8. Typhoid fever by nativity and sex, ... 654
No. 9. Diphtheria, ... 654
No. 10. Diphtheria, distribution of by age periods, State, urban and rural, and percentage at each age to total cases in each locality, ... 654
No. 11. Diphtheria by nativity and age period, ... 655
No. 12. Diphtheria by color and age periods, ... 655
No. 13. Diphtheria by sex and color, ... 655
No. 14. Diphtheria by nativity and sex, ... 655
No. 15. Scarlet fever, comparison of cases reported by months for the years 1906 to 1915, inclusive, ... 656
No. 16. Scarlet fever, distribution of by age periods, State, urban and rural, with percentage in each age period to total cases in each locality, ... 656
No. 17. Scarlet fever by nativity and age periods, ... 656
No. 18. Scarlet fever by color and age periods, ... 657
No. 19. Scarlet fever by sex and color, ... 657
No. 20. Scarlet fever by nativity and sex, ... 657
No. 21. Tuberculosis, comparison of cases reported by months for the years 1906 to 1915, inclusive, ... 657
No. 22. Tuberculosis, distribution of by age periods, State, urban and rural, ... 658
No. 23. Tuberculosis by nativity and age periods, ... 658
No. 24. Tuberculosis by age and color, ... 658
No. 25. Tuberculosis by sex and color, ... 659
No. 26. Tuberculosis by nativity and sex, ... 659
Moreland Spring Water Company, ... 103,115
Mortality:
By age, ... 551
By causes, ... 563
By color, ... 577
Summary of, ... 469
Mortality tables, ... 509
Table No. 1, ... 510
Table No. 2, ... 517
Table No. 3, ... 551
Table No. 4, ... 563
Table No. 5, ... 577
Table No. 6, ... 582
Table No. 7, ... 594
Table No. 8, ... 599
Table No. 9, ... 607
Mount Carbon, health conditions, ... 419
Mount Carmel:
Tuberculosis dispensary, ... 59
Sanitary index, ... 491
Mount Gretna, National Guard encampment, ... 1318
Mount Joy, storm damage investigation, ... 1318
Mount Pleasant, tuberculosis dispensary, ... 61
Mumps, 316 324, 335, 338, 341, 344, 347, 350, 353, 354, 355, 365, 371, 377, 380, 389, 392, 394, 397, 399, 401, 402, 404, 407, 408, 415, 425, 428, 437, 439, 442, 445, 448, 449, 451, 459
Municipalities, indebtedness of, ... 99

Nanticoke:
Tuberculosis dispensary, ... 58
Sanitary index, ... 491
National Guard encampment, Mount Gretna, ... 1318
Nativity:
Number of children born to mothers, including present birth, according to nativity of mother, for the entire State and for certain subdivisions thereof, ... 641
Number of children living, including present birth, according to nativity of mothers, for the entire State and certain subdivisions thereof, ... 642
Nativity and occupations of all tuberculosis dispensary patients who were discharged regardless of date of admission, ... 791
Nervous diseases and school inspection, ... 289,302
Nervous system, diseases of, death rates from, ... 507
New Bloomfield, tuberculosis dispensary, ... 59
New Castle:
Tuberculosis dispensary, ... 57
Sanitary index, ... 491

New Kensington:
Taste and odor of Allegheny River water, ... 1276
Outbreak of typhoid fever, ... 1369
Newport:
Epidemic of typhoid fever, ... 159
Sewerage, ... 159
Water supply, ... 160
Typhoid, history of, ... 161
Milk supplies, ... 164
New York and Pennsylvania Company, ... 1303
Norristown:
Tuberculosis dispensary, ... 58
Sanitary index, ... 492
Northampton County:
County medical inspector, ... 12
Township health officers, ... 21
School medical inspectors, ... 33
Local registrars, ... 48
Tuberculosis dispensaries, ... 59
Distributors of antitoxin, ... 83
Alleged case of whooping cough, ... 276
Abstract of report of county medical inspector, ... 407
North Braddock, sanitary index, ... 492
Northumberland County:
County medical inspector, ... 12
Township health officers, ... 21
School medical inspectors, ... 33
Local registrars, ... 48
Tuberculosis dispensaries, ... 59
Distributors of antitoxin, ... 83
Abstract of report of county medical inspector, ... 407
Nuisance, book louse, ... 277
Nuisances, reports on, ... 1054
Nurses:
Registration of, ... 99
Social work, ... 188
Tuberculosis dispensaries, ... 759
Nursing staffs, ... 93

Oakmont, outbreak of typhoid fever, ... 1436
Oak Run school district, ... 209,241
Diphtheria in, ... 241
Occupations and nativity of all tuberculosis dispensary patients who were discharged regardless of date of admission, ... 791
Occupations of patients discharged from the Hamburg sanatorium in 1915, 1009
Officers and agents, list of, ... 9
Officers of Bureau of Vital Statistics, ... 37
Oil City:
Tuberculosis dispensary, ... 60
Sanitary index, ... 492
Old Forge, sanitary index, ... 493
Operations at the Hamburg sanatorium in 1915, ... 1008
Ophthalmia neonatorum, ... 392
Orders of abatement, ... 1060
Organization of the Department, ... 5
Organization, division of medical inspection, ... 207
Orwigsburg, health conditions, ... 418
Otto Chemical Company, ... 1313
Overbrook Farms, ... 105

Pan-American Exposition, ... 94
Panama-Pacific International Exposition, ... 94,759
Parents and school inspection, ... 285
Parks, sanitary inspection of, ... 1347
Parnassus, outbreak of typhoid fever, ... 1369
Patrol of watersheds, ... 1339
Penn Chemical Company, ... 1314
Pennsylvania Railroad Company, railroad medical inspectors, ... 13
Pennsylvania State Sanatorium for Tuberculosis, No. 1, Mont Alto, ... 936
Pennsylvania State Sanatorium for Tuberculosis, No. 2, Cresson, ... 965
Pennsylvania State Sanatorium for Tuberculosis, No. 3, Hamburg, ... 992
Percentage decrease, sanitary index, ... 479
Percentage increase or decrease, sanitary index, ... 479
Permits and decrees, water works and filtration, issued by the Commissioner of Health, ... 1070
Detailed tables and data, ... 1072-1184

Perry County:
County medical inspector, ... 12
Township health officers, ... 21
School medical inspectors, ... 33
Local registrars, ... 48
Tuberculosis dispensary, ... 59
Distributors of antitoxin, ... 84
Epidemic of typhoid fever, ... 159
Abstract of report of county medical inspector, ... 408
Personnel of division of medical inspection, ... 10
Personnel of general division, ... 9
Petitions and complaints, ... 1053
Philadelphia & Reading Railway Company, railroad medical inspectors, ... 14
Philadelphia County and City (territorially identical):
Tuberculosis dispensaries, ... 59
Local registrars, ... 49
Sanitary index, ... 493
Outbreak of typhoid fever, ... 1440
Philipsburg, tuberculosis dispensary, ... 55
Phoenixville:
Tuberculosis dispensary, ... 55
Sanitary index, ... 493
Pike County:
County medical inspector, ... 12
Township health officers, ... 21
School medical inspectors, ... 34
Local registrars, ... 49
Tuberculosis dispensary, ... 59
Distributors of antitoxin, ... 84
Abstract of report of county medical inspector, ... 409
Pipes, water, extension of, ... 99
Pittsburgh:
Tuberculosis dispensaries, ... 54
Sanitary index, ... 493
Pittston:
Tuberculosis dispensary, ... 58
Typhoid fever, ... 395
Sanitary index, ... 494
Outbreak of typhoid fever, ... 1453
Plymouth, sanitary index, ... 494
Pneumonia, ...316, 325, 341, 344, 346, 380, 389, 392, 408, 437, 440, 442, 450, 461
Poisoning, reporting of, ... 91
Poliomyelitis (see also infantile paralysis), 93, 221, 256, 257, 260, 261, 262, 366, 386, 440, 442, 450, 461
Clinical observations on, ... 260
Erie, ... 256
Erie County, ... 257
Laboratory research, ... 261
Meteorological conditions, ... 260
Titusville, ... 262
Pollution, elimination of gas works waste, on the Schuylkill River, ... 1317
Port Carbon, outbreak of typhoid fever, ... 1456
Portland tannery, ... 1298
Potter County:
County medical inspector, ... 12
County medical deputy, ... 13
Township health officers, ... 21
School medical inspectors, ... 34
Local registrars, ... 49
Tuberculosis dispensary, ... 60
Distributors of antitoxin, ... 84
Abstract of report of county medical inspector, ... 410
Pottstown:
Tuberculosis dispensary, ... 58
Sanitary index, ... 494
Pottsville:
Tuberculosis dispensary, ... 60
Health conditions, ... 420
Sanitary index, ... 495
Outbreak of typhoid fever, ... 1456
Powers of boards of health, ... 99
Pregnant women, immunized, typhoid, ... 189
Prosecutions, ... 201,420
Violations of quarantine law, ... 420
Protection of foods, ... 215
Public eating houses, regulation of, ... 195

Public Eating Place Act, ... 92
Public Service, division of, ... 9,92,195
Punxsutawney, tuberculosis dispensary, ... 57
Purchasing Division, ... 89

Quarantinable diseases and school inspection, ... 289,302
Quarantine:
Changes in, ... 212
Law, ... 194,201
Minimum standard for, ... 212
Prosecutions for violation, ... 420
Work, ... 216
Quinn & Company (chemical plant), ... 1309

Rabies, ... 347
Railroad medical inspectors, list of, ... 13
Railway, steam, injuries, deaths from, ... 508
Rainey, W. J., Coal and Coke Company, ... 369
Rates of death:
Per 1,000 of population, corresponding ages, ... 474
Per 100,000 population, ... 473
Various, of each place and group, sanitary index, ... 482
Reading:
Tuberculosis dispensary, ... 54
Sanitary index, ... 495
Reedsville, typhoid fever, ... 231
Registrars, local county, ... 38
Registration, births, deaths, marriages and diseases, ... 99
Registration of nurses, ... 99
Regulating sanitary conditions, hotels, restaurants, etc., ... 99
Regulation of hotels and public eating houses, ... 195
Remedial measures in typhoid epidemic, ... 118,169
Remedies for tuberculosis, ... 754
Renovo:
Tuberculosis dispensary, ... 55
Outbreak of typhoid fever, ... 1460
Rental from property abutting on sewers, ... 99
Reports:
Accounting and Purchasing, Division of, ... 1493
Biological Products, Division of, distribution of, ... 1015
Commissioner of Health, ... 5
County medical inspectors, ... 309
Detailed work done by, ... 463
General Inspector, ... 194
Health officers, summary, ... 466
Housing, Bureau of, ... 1039
Laboratories and Experimental Station, Division of, ... 671
Laryngologists, tuberculosis, ... 787
Medical Inspection, Division of, ... 205
Morbidity, Sunbury, ... 247
Sanatoria:
Pennsylvania State Sanatorium for Tuberculosis, No. 1, Mont Alto, 936
Pennsylvania State Sanatorium for Tuberculosis, No. 2, Cresson, 965
Pennsylvania State Sanatorium for Tuberculosis, No. 3, Hamburg, 992
Sanitary Engineering, Division of, ... 1047
Special, ... 192
Supplies, Division of, ... 1515
Treatment of tuberculosis with Dixon's fluid in dispensaries in 1915, 779
Tuberculosis, Division for the Control of, ... 749
Vital Statistics, Division of, ... 467
Researches:
Experiment on the currative value of the serum of rabbits immunized with the unheated filtrate of bouillon cultures of tubercle bacilli, .. 740
Experiment to demonstrate the curative value of tubercle bacilli digested with pepsin and trypsin, ... 742
Isolation of B. typhosus from celery, ... 744
Resignations, ... 6,8
Respiratory system, diseases of, death rates from, ... 507
Restaurants, ... 91,99
Restaurants, hotels, etc., regulating sanitary conditions, ... 99
Resting station, tuberculosis, ... 755
Results of blood-pressure study in 3,754 cases of pulmonary tuberculosis and its complications, ... 784
Retirements, ... 7
Revision of circulars, ... 210

Ridgway:
Tuberculosis dispensary, ... 56
Typhoid fever, ... 230
Ridgway tannery, ... 1299
Ringworm, ... 428
Rochester, tuberculosis dispensary, ... 54
Rolfe tannery, ... 1312
Rules and regulations:
Advisory Board, ... 91,196
Local boards of health, ... 194

St. Clair, outbreak of typhoid fever, ... 1456
St. Marys tannery, ... 1301
Saltillo, outbreak of typhoid fever, ... 1462
Sanatoria and hospitals, maintenance of inmates, ... 99
Sanatoria, tuberculosis, subdivision of, ... 61
Cresson, ... 8
Hamburg, ... 8
Mont Alto, ... 8
Upfollow of former patients of the tuberculosis dispensaries and sanatoria, ... 800
Sanatorium treatment, tuburculosis, ... 755
"Sanitary (The) Engineer in Public Health Work," by Samuel G. Dixon, 96
Sanitary Engineering, Division of:
Personnel of, ... 86
Report of, ... 1047
Sanitary index, ... 475
Percentage decrease, ... 479
Residual rates, increase or decrease, ... 479
Various rates of each place and group, ... 482
Sanitary inspections:
Parks, fair grounds and camps, ... 1347
School buildings and grounds, ... 295
School buildings, tabulated data, ... 297
Sanitary surveys in certain cities, boroughs and townships during the year 1915, ... 1344
Scabies, ... 316, 325, 405, 428
Scalds. See burns and scalds.
Scalp Level, outbreak of typhoid fever, ... 1465
Scarlet fever, 209, 218, 268, 270, 312, 316, 319, 325, 331, 336, 338, 339, 341, 344, 346, 349, 353, 354, 356, 363, 365, 370, 378, 380, 384, 392, 394, 397, 398, 399, 401, 402, 405, 407, 409, 412, 416, 425, 427, 428, 435, 437, 439, 443, 447, 449, 453, 502, 656, 657
Color and age periods, ... 675
Comparison of cases reported by months for the years 1906 to 1915, inclusive, ... 656
Distribution by age periods, State, urban and rural, with the percentage of each age period to total cases in each locality, ... 656
Gettysburg College, ... 209,268
Hazleburst, ... 398
Lehighton, ... 270
Nativity and age periods, ... 656
Nativity and sex, ... 657
Sex and color, ... 657
Scarlatina, ... 408
Schema of classification of results of treatment and the condition of patients on discharge from sanatorium, hospital or dispensary care for tuberculosis, 801
School buildings and grounds, sanitary inspection of, ... 295
School buildings, sanitary inspections, tabulated data, ... 297
School circular, "Cleanse the Teeth," 286
School directors and superintendents, school inspection, ... 284
School district, Oak Run, ... 209
School inspection:
Breathing, ... 288,302
Cervical glands, ... 288,302
Deformities, ... 289,302
Directors and superintendents, ... 284
Fourth-class districts, ... 281
Hearing, ... 288,301
Malnutrition, ... 289,302
Miscellaneous affections, ... 289,302
Nervous diseases, ... 289,302
Parents, ... 285
Quarantinable diseases, ... 289,302
Second-class districts, ... 305
Skin diseases, ... 289,302
Statistics, ... 283

Tables, ... 290
Tabulation of defects, ... 288,301,304
Teachers, ... 284
Teeth, ... 288,302
Third-class districts, ... 300
Tonsils, ... 288,302
Tuberculosis, ... 288,302
Vision, ... 288,301
Vision defects, ... 293
School medical inspection:
Fourth-class districts, ... 281
Statistics of, ... 288
Second-class districts, ... 305
Third-class districts, ... 300
Statistics of, ... 301
School medical inspectors, list of, ... 24
Schools:
Closed for disinfection, ... 417
Inspection of, ... 197
Schuylkill County:
County medical inspector, ... 12
County medical deputies, ... 13
Township health officers, ... 21
School medical inspectors, ... 34
Local registrars, ... 49
Tuberculosis dispensaries, ... 60
Distributors of antitoxin, ... 84
Abstract of report of county medical inspector, ... 410
Schuylkill Haven, health conditions, ... 418
Schuylkill River, elimination of gas works waste pollution, ... 1317
Scientific papers, ... 97
Scranton:
Tuberculosis dispensary, ... 57
Sanitary index, ... 495
Second-class school districts, inspection in, ... 305
Selinsgrove, tuberculosis dispensary, ... 60
Serum of rabbits:
Experiment on the curative value of the serum of rabbits immunized with the unheated filtrate of bouillon cultures of tubercle bacilli, ... 740
Sewage:
Danville asylum, ... 130
Treatment, ... 1225
Treatment plants, ... 1236,1255
Tables of in Pennsylvania, 1915, ... 1257
Sewerage:
Applications, ... 1063
Danville, ... 146
Decrees and permits, ... 1225
Newport, ... 159
Sewage treatment plants, ... 1236,1255
Tables of sewage treatment plants in Pennsylvania, 1915, ... 1257
Sewerage and sewage treatment permits and decrees issued by the Commissioner of Health with the agreement of the Governor and the Attorney General, ... 1188
Sewers and disposal plants, county, ... 99
Shamokin:
Tuberculosis dispensary, ... 59
Sanitary index, ... 495
Sharon:
Tuberculosis dispensary, ... 58
Sanitary index, ... 496
Shenandoah:
Tuberculosis dispensary, ... 60
Sanitary index, ... 496
Shippensburg:
Epidemic of typhoid, ... 171
Water works system, ... 172
Charitable and philanthropic agencies, ... 181
Water supply, ... 181
Milk supply, ... 185
Summary of typhoid epidemic, ... 190
Skin diseases and school inspection, ... 289,302

Smallpox, 209, 215, 217, 264, 265, 313, 317, 337, 364, 370, 373, 376, 378, 380, 385, 399, 413, 428, 439, 442
Dickson City, 264
Jessup, 265
Lackawanna County, 215
Marshwood, 265
Smallpox vaccine, 1036
Snyder County:
County medical inspector, 12
Township health officers, 22
School medical inspectors, 34
Local registrar, 49
Tuberculosis dispensary, 60
Distributors of antitoxin, 84
Abstract of report of county medical inspector, 425
Social service in tuberculosis, 760
Social work, summary of, 188
Soda process, 1304
Somerset County:
County medical inspector, 12
County medical deputy, 13
Township health officers, 22
School medical inspectors, 34
Local registrars, 49
Tuberculosis dispensary, 60
Distributors of antitoxin, 84
Abstract of report of county medical inspector, 426
Sources of supply of water works systems which have been the subjects of permits or decrees, 1905-1915, 1168
South Bethlehem:
Tuberculosis dispensary, 59
Sanitary index, 496
Special investigations, 202
Special reports, 192
Specimens examined in the laboratories during the year 1915, 673
Springfield Consolidated Water Company, 104,115
Standard, minimum, for quarantine, 212
State:
Deaths in each municipality by ages of decedents. See deaths in entire State.
Deaths in each municipality by causes. See deaths in entire State.
Deaths in each municipality by color, nativity and parent nativity. See deaths in entire State.
Forestry Departmnt and watersheds, 184
Sanatoria for tuberculosis:
No. 1, Mont Alto, officers of, 61
No. 2, Cresson, officers of, 69
No. 3, Hamburg, officers of, 73
Statistics:
Bureau of, general summary, 469
School inspection, 283
School medical inspection, second-class districts, 288
School medical inspection, third-class districts, 301
Upfollow of tuberculosis, 93
Vital, law, 195
Vital, tuberculosis dispensaries, 751
Steam railway injuries, deaths from, 508
Steelton, sanitary index, 497
Stites, Thomas H. A., M. D., Medical Director, Pennsylvania State Sanatorium for Tuberculosis, No. 3, Hamburg, 992
Stony Point dam, 178
Storm damage investigations, 1318
Straight Creek plant (T. H. Quinn & Company), 1310
Stroudsburg, tuberculosis dispensary, 58
Subdivision of tuberculosis dispensaries, general report of, 751
Subdivision of tuberculosis sanatoria, 61
Suicide, deaths from, 508
Sullivan County:
County medical inspector, 12
Township health officers, 22
School medical inspectors, 35
Local registrars, 49
Tuberculosis dispensary, 60
Distributors of antitoxin, 85
Abstract of report of county medical inspector, 435

Sulphite process, ... 1306
Summary:
Of Bureau of Vital Statistics, ... 469
Of health exhibits, ... 796
Of health officers' reports, ... 466
Of sanitary field inspection for the year 1915, classified according to the major watersheds of the State, ... 1346
Of sanitary survey of certain minor watersheds made during 1915, ... 1341
Of Shippensburg typhoid epidemic, ... 190
Of tannery wastes, Clarion River basin 1295
Of tuberculosis dispensary work by months, ... 764
Of water works sources, ... 1177
Sunbury:
Tuberculosis dispensary, ... 59
Diphtheria, ... 244
Morbidity reports, ... 247
High morbidity in, ... 251
Sanitary index, ... 497
Supplies, Division of:
Personnel of, ... 90
Report of, ... 1515
Susquehanna, tuberculosis dispensary, ... 60
Susquehanna County:
County medical inspector, ... 12
County medical deputies, ... 13
Township health officers, ... 22
School medical inspectors, ... 35
Local registrars, ... 50
Tuberculosis dispensaries, ... 60
Distributors of antitoxin, ... 85
Abstract of report of county medical inspector, ... 435
Susquehanna plant (T. H. Quinn & Company), ... 1309
Swissvale, outbreak of typhoid fever, ... 1471
Syphilis, Wassermann tests for, ... 210

Tables:
Birth—
Table No. 1, ... 619
Table No. 2, ... 640
Table No. 3, ... 641
Table No. 4, ... 642
Table No. 5, ... 643
Marriage—
Table No. 1, ... 664
Table No. 2, ... 667
Table No. 3, ... 668
Table No. 4, ... 668
Table No. 5, ... 669
Table No. 6, ... 669
Table No. 7, ... 669
Morbidity—
Table No. 1, ... 648
Table No. 2, ... 649
Table No. 3, ... 652
Table No. 4, ... 653
Table No. 5, ... 653
Table No. 6, ... 653
Table No. 7, ... 654
Table No. 8, ... 654
Table No. 9, ... 654
Table No. 10, ... 654
Table No. 11, ... 655
Table No. 12, ... 655
Table No. 13, ... 655
Table No. 14, ... 655
Table No. 15, ... 656
Table No. 16, ... 656
Table No. 17, ... 656
Table No. 18, ... 657
Table No. 19, ... 657
Table No. 20, ... 657
Table No. 21, ... 657
Table No. 22, ... 658

Table No. 23, ... 658
Table No. 24, ... 658
Table No. 25, ... 659
Table No. 26, ... 659
Mortality—
By age, ... 551
By causes, ... 563
By color, ... 577
General, ... 509
Table No. 1, ... 510
Table No. 2, ... 517
Table No. 3, ... 551
Table No. 4, ... 563
Table No. 5, ... 577
Table No. 6, ... 582
Table No. 7, ... 594
Table No. 8, ... 599
Table No. 9, ... 607
School inspection, ... 290
Sewage treatment plants in Pennsylvania, 1915, ... 1257
Tuberculosis dispensary operations, ... 762
Tabulated data of sanitary inspections of school buildings, ... 297
Tabulations:
Births, ... 617
Defects, school inspection, ... 288,301,304
Upfollow in tuberculosis, ... 804
Tamaqua, tuberculosis dispensary, ... 60
Tanning process, Clarion River basin, ... 1290
Tarentum, tuberculosis dispensary, ... 54
Teachers and school inspection, ... 284
Teeth, school circular, ... 286
Teeth and school inspection, ... 288,302
Tests, Wassermann, ... 682
Tetanus, ... 342, 344, 389, 392, 437, 450
Tetanus antitoxin, ... 1030
Tables on, ... 1031
Third-class school districts:
Medical inspection in, ... 300
Statistics of medical inspection, ... 301
Tioga County:
County medical inspector, ... 12
County medical deputies, ... 13
Township health officers, ... 22
School medical inspectors, ... 35
Local registrars, ... 50
Tuberculosis dispensary, ... 60
Distributors of antitoxin, ... 85
Abstract of report of county medical inspector, ... 436
Tionesta, tuberculosis dispensary, ... 57
Titusville:
Tuberculosis dispensary, ... 56
Poliomyelitis, ... 262
Tonsils and school inspection, ... 288,302
Total deaths, ... 471
For certain groups of diseases, ... 472
Towanda, tuberculosis dispensary, ... 54
Tower City, health conditions, ... 419
Township health officer, ... 200
Township health officers, list of, ... 14
Township water supplies, ... 99,194,1336
Trachoma, ... 313,450
Transmittal, letter of, ... 3
Trauger, outbreak of typhoid fever, ... 1474
Treatment of tuberculosis with Dixon's fluid in dispensaries in 1915, report of, ... 779
Treatment, sanatorium, tuberculosis, ... 755
Tubercle bacilli:
Experiment on the curative value of the serum of rabbits immunized with the unheated filtrate of bouillon cultures of tubercle bacilli, ... 740
Experiment to demonstrate the curative value of tubercle bacilli digested with pepsin and trypsin, ... 742
Tubercle bacilli products, ... 1033
Tubercle bacillus:
Results obtained with the use of the biological products of the tubercle bacillus (suspension of dead tubercle bacilli, and extract of tubercle bacilli, or "Dixon's Fluid"), ... 944

Tuberculin record, ... 789
Tuberculosis, 93, 218, 317, 326, 341, 344, 347, 366, 380, 389, 392, 393, 402, 406, 408, 409, 438, 440, 443, 450, 451, 505, 657, 658, 659, 754, 755, 756, 760, 779, 784, 787, 788, 791, 793, 800, 801, 802, 804, 869, 871, 877, 878, 886, 889, 897, 904, 912, 913, 924, 929, 930, 965, 969, 992
Additional upfollow notes on former tuberculous patients, ... 869
Addresses on, ... 756
Age and color, ... 658
Comparison of cases reported by months for the years 1906 to 1915, inclusive, ... 657
Detailed list of tuberculous patients admitted and discharged, by sex, occupation and nativity, ... 791
Distribution by age periods, State, urban and rural, ... 658
Incidence of tuberculosis in families of 351 former patients of the State sanatorium at Cresson as traced the last half of 1915, ... 912
Incidence of tuberculosis in families of 173 former patients of the State sanatorium at Hamburg as traced the last half of 1915, ... 929
Incidence of tuberculosis in families of 974 former patients of the State sanatorium at Mont Alto as traced during the first half of 1915, ... 877
Additional upfollow notes on ex-patients in this series, ... 878
Incidence of tuberculosis in families of 1,294 patients of the State sanatorium at Mont Alto as traced during the last half of 1915, ... 886
Monthly report of laryngologist, ... 788
Nativity and age periods, ... 658
Nativity and sex, ... 659
Occupation and nativity of all tuberculous patients who were discharged regardless of date of admission, ... 791
Remedies, ... 754
Report of laryngologists, ... 787
Report of treatment with Dixon's fluid in dispensaries in 1915, ... 779
Resting station, ... 755
Results of blood-pressure study in 3,754 cases of pulmonary tuberculosis and its complications, ... 784
Sanatorium treatment, ... 755
Schema of classification of reseults of treatment and the condition of patients on discharge from sanatoria, hospital or dispensary care for tuberculosis, ... 801
Sex and color, ... 659
Social service in, ... 760
The prognostic value of the urochromogen reaction in pulmonary tuberculosis, by M. E. Cowen, M. D., ... 969
Upfollow, ... 802
Upfollow of former patients of the tubrculosis dispensaries and sanatoria, ... 800
Upfollow report of discharged tuberculous patients in regard to subsequent dispensary attendance, ... 878
Upfollow report of discharged patients in regard to subsequent dispensary attendance, Cresson, ... 913
Upfollow report of discharged tuberculous patients in regard to subsequent dispensary attendance, Cresson, ... 904
Upfollow report of 285 tuberculous patients previously discharged from Cresson sanatorium, ... 897
Upfollow report of discharged tuberculous patients in regard to subsequent dispensary attendance, Hamburg, ... 930
Upfollow report of 173 tuberculous patients previously discharged from Hamburg sanatorium, ... 924
Upfollow January 1, 1915, to July 1, 1915, of former patients of Mont Alto sanatorium grouped according to original admission classification, and by sex, color, social condition and age, and a comparison of occupation and income before admission and as upfollowed, .. 889
Upfollow report of 874 patients previously discharged from Mont Alto tuberculosis sanatorium, ... 871
Upfollow statistics, ... 93
Upfollow tabulation, ... 804
Upfollow work, ... 755
Tuberculosis, Division for the Control of, ... 53
Officers of, ... 749
Subdivision of Dispensaries:
Classification of cases admitted and discharged during 1915—
Sex and social conditions, ... 765
Sex and color of cases, ... 765
Sex and age of cases, ... 766
Sex and family history, ... 767
Sex and contacts, ... 767
Social statistics concerning the 11,665 cases admitted and discharged, ... 768,769
Character of dwellings occupied by cases, ... 768

Financial statistics concerning the 11,665 cases admitted and discharged, ... 769
Sex and classification of dispensary cases admitted prior to 1915 and discharged during the year, ... 770
Admitted and discharged during 1915, ... 770
Sex and nativity of cases admitted and discharged during 1915, 770
Sex, admission and discharge; classification of cases admitted prior to January 1, 1915, and discharged during 1915, ... 771
Sex, admission and discharge; classification of cases admitted and discharged during 1915, ... 771
Sex, classification and nature of discharge; cases admitted prior to January 1, 1915, and discharged during 1915, ... 772
Sex, classification and nature of discharge of cases admitted and discharged during 1915, ... 772
Sex, and number of dispensary visits while under treatment, of the cases admitted prior to January 1, 1915, and discharged during the year 1915, ... 773
Sex and number of dispensary visits of cases admitted and discharged during 1915, ... 774
Sex and dispensary months (time under treatment) for cases admitted prior to January 1, 1915, and discharged during 1915, ... 775
Sex and dispensary months (time under treatment) of cases admitted and discharged during 1915, ... 776
Gain or loss in weight in cases admitted and discharged during 1915, ... 777
Sex and family history of tuberculosis for the cases admitted and discharged during 1915. ... 777
Sex and number of tuberculous relatives of cases giving tuberculosis family history among the cases admitted and discharged during 1915, ... 778
Nativity of patients admitted and discharged during 1915, .. 778
Summary of patients' history, ... 778
Donations, ... 761
General report of, ... 751
Inspections of dispensaries, ... 757
Locations of dispensaries, ... 53
Nurses in dispensaries, ... 759
Table of dispensary operations, ... 762
Vital statistics of dispensaries, ... 751
Work of dispensaries, summary by months, ... 764
Tuberculosis and school inspection, ... 288,302
Tuberculosis exhibit, ... 793
Tuberculosis (all forms), death rates from, ... 505
Tuberculosis of the lungs, death rates from, ... 505
Tuberculosis Sanatoria, Subdivision of, ... 61
Pennsylvania State Sanatorium for Tuberculosis, No. 1, Mont Alto, 936
Pennsylvania State Sanatorium for Tuberculosis, No. 2, Cresson, ... 965
Pennsylvania State Sanatorium for Tuberculosis, No. 3, Hamburg, .. 992
Tunkhannock, tuberculosis dispensary, ... 61
Turnbull, William G., M. D., Medical Director, Pennsylvania State Sanatorium for Tuberculosis, No. 2, Cresson, ... 965
Typhoid fever, 92, 103, 112, 118, 125, 134, 140, 141, 147, 148, 151, 157, 159, 168, 169, 171, 182, 187, 188, 190, 219, 222, 224, 227, 228, 230, 231, 234, 310, 311, 317, 319, 326, 328, 336, 337, 339, 342, 344, 346, 348, 350, 353, 355, 357, 363, 366, 370, 375, 377, 380, 384, 387, 388, 392, 394, 395, 396, 399, 400, 402, 403, 405, 408, 411, 416, 425, 427, 436, 437, 440, 443, 444, 447, 449, 452, 459, 497, 500, 653, 654, 1358, 1363, 1369, 1374, 1380, 1383, 1389, 1390, 1394, 1399, 1403, 1405, 1415, 1417, 1424, 1427, 1430, 1434, 1436, 1440, 1453, 1456, 1460, 1462, 1465, 1471, 1474, 1475, 1478
Allentown, ... 1358
Altoona, ... 1363
Arnold, ... 1369
Bloomsburg, ... 222
Bristol, ... 1374
Brookville, ... 224
Canonsburg, ... 1380
Carrier, typhoid, ... 168
Chambersburg, ... 1383
Coatesville, ... 1389
Collegeville, ... 228
Color and age periods, ... 653
Comparison of cases reported by months for the years 1906 to 1915, inclusive, ... 652

Cumberland County, ... 187
Danville, ... 125, 141, 147
Control of, ... 148
Epidemiological study, ... 151
Treatment, ... 157
Danville State Insane Asylum, ... 125
Control of, ... 140
Epidemiological study, ... 134
Distribution by age periods, State, urban and rural, and percentage of each age to total cases of each locality, ... 653
Earlston, ... 1394
Epidemiological study in Danville, ... 151
Epidemiological study in Danville State Asylum, ... 134
Everett, ... 1390
Frogtown, ... 227
Gallitzin, ... 1399
Hamburg, ... 1403
Immunization, ... 188
Jeannette, ... 1405
Jefferson County, ... 224
Johnsonburg, ... 1415
Johnstown, ... 1417
Kutztown, ... 1427
Lewistown, ... 231, 1430
Lititz, ... 1434
Montgomery County, ... 112
Nativity and age periods, ... 653
Nativity and sex, ... 654
New Kensington, ... 1369
Newport, ... 159
Oakmont, ... 1436
Occurrence among workmen in labor camp, ... 182
Parnassus, ... 1369
Philadelphia, ... 1440
Pittston, ... 395, 1453
Port Carbon, ... 1456
Pottsville, ... 1456
Reedsville, ... 231
Remedial measures, ... 118, 169, 1424
Renovo, ... 1460
Ridgway, ... 230
St. Clair, ... 1456
Saltillo, ... 1462
Scalp Level, ... 1465
Sex and color, ... 654
Shippensburg, ... 171
Summary of epidemic, ... 190
Swissvale, ... 1471
Trauger, ... 1474
Typhoid carrier, ... 168
Verona, ... 1436
Villa Maria Academy, West Chester, ... 1475
Watersheds and remedial measures, ... 1424
West Chester, Villa Maria Academy, ... 1475
Yeagertown, ... 231
York, ... 1478
York County, ... 234
Typhoid fever, death rates from, ... 500
Typhoid fever epidemics, ... 92
Typhoid vaccine, ... 1035
Tyrone, tuberculosis dispensary, ... 54

Union County:
County medical inspector, ... 12
Township health officers, ... 22
School medical inspectors, ... 35
Local registrars, ... 50
Tuberculosis dispensary, ... 60
Distributors of antitoxin, ... 85
Abstract of report of county medical inspector, ... 438
Uniontown:
Tuberculosis dispensary, ... 56
Sanitary index, ... 497
Upfollow in tuberculosis, ... 802
Additional notes on former tuberculosis dispensary patients, ... 869
Former patients of the tuberculosis dispensaries and sanatoria, ... 800

Report of discharged tuberculous patients in regard to subsequent dispensary attendance, ... 878
Report of discharged tuberculous patients in regard to subsequent dispensary attendance, Cresson, ... 904, 913
Report of 285 tuberculous patients previously discharged from Cresson sanatorium, ... 897
Report of discharged tuberculous patients in regard to subsequent dispensary attendance, Hamburg, ... 930
Report of 173 tuberculous patients previously discharged from Hamburg sanatorium, ... 924
Report January 1, 1915, to July 1, 1915, of former patients of Mont Alto sanatorium grouped according to original admission classification, and by sex, color, social condition and age, and a comparison of occupation and income before admission and as upfollowed, ... 889
Report of 974 patients previously discharged from Mont Alto sanatorium, ... 871
Statistics of tuberculosis, ... 93
Tabulation in tuberculosis, ... 804
Work in tuberculosis, ... 756

Vaccination, anti-typhoid, ... 158
Vaccine:
Anti-typhoid, ... 140
Supplied by State, ... 190
Typhoid, ... 1035
Virus, ... 1036
Venango County:
County medical inspector, ... 12
County medical deputies, ... 13
Township health officers, ... 22
School medical inspectors, ... 35
Local registrars, ... 50
Tuberculosis dispensaries, ... 60
Distributors of antitoxin, ... 85
Abstract of report of county medical inspector, ... 438
Verona, outbreak of typhoid fever, ... 1436
Villa Maria Academy, West Chester, outbreak of typhoid fever, ... 1475
Village watersheds, ... 1334
Violation of quarantine, prosecutions for violation, ... 420
Virus, vaccine, ... 1036
Vision and school inspection, ... 288,301
Vision defects, school inspection, ... 293
Vital Statistic Law, ... 195
Vital Statistics, Bureau of, ... 37
General summary, ... 469
Vital statistics of tuberculosis dispensaries, ... 751

Warren:
Tuberculosis dispensary, ... 60
Sanitary index, ... 497
Warren County:
County medical inspector, ... 12
County medical deputies, ... 13
Township health officers, ... 22
School medical inspectors, ... 35
Local registrars, ... 50
Tuberculosis dispensary, ... 60
Distributors of antitoxin, ... 85
Abstract of report of county medical inspector, ... 440
Washington:
Tuberculosis dispensary, ... 60
Sanitary index, ... 498
Washington County:
County medical inspector, ... 12
Township health officers, ... 23
School medical inspectors, ... 35
Local registrars, ... 50
Tuberculosis dispensaries, ... 60
Distributors of antitoxin, ... 85
Abstract of report of county medical inspector, ... 444
Wassermann tests, ... 210,682
Wastes, industrial:
Survey of the Clarion River basin, ... 1279
Tannery, Clarion River basin, ... 1295
Water examinations in laboratory, ... 674
Water filtration:
Instructive information concerning water filtration in Pennsylvania, 1252

Water filtration plants, ... 1237
Armstrong Water Company plant, ... 1316
Water pipes, extension of, ... 99
Watersheds, ... 195
Improvement of 1320
Patrol of, ... 1339
State Forestry Department, ... 184
Summary of sanitary field inspection for the year 1915 classified according to the major watersheds of the State, ... 1346
Summary of sanitary survey of certain minor watersheds, ... 1341
Typhoid fever and remedial measures, ... 1424
Village, ... 1334
Whiskey Run, ... 176
Water supplies:
Bloomsburg, ... 222
Borough, ... 1322
Brookville, ... 225
City, ... 1320
Classification of sources of water supply covered in permits and decrees issued 1905-1915, ... 1168
Danville asylum, medical report, ... 136
Industrial, ... 1337
Institution, ... 1337
Lewistown, ... 232
Newport, ... 160
Shippensburg, bacteriological evidence, ... 181
Sources of supply of water works systems which have been the subjects of permits or decrees, 1905-1915, ... 1168
Summary of water works sources, ... 1177
Township, ... 99,194,1336
Typhoid fever epidemics, ... 103,126,129,160
Water works, ... 1070
Chemicals used in filtration, ... 1239
Danville, ... 142
Filter designs made the subjects of permits or decrees, ... 1177
Filtration plants, ... 1237
Table of, ... 1240
Instructive information concerning water filtration in Pennsylvania, 1252
Shippensburg, ... 172
Summary of sources, ... 1177
Tables on, ... 1179
Water works and filtration permits and decrees issued by the Commissioner of Health, ... 1070
Detailed tables and data, ... 1072-1184
Water works and sewerage applications, ... 1063
Wayne County:
County medical inspector, ... 12
Township health officers, ... 23
School medical inspectors, ... 36
Local registrars, ... 51
Tuberculosis dispensary, ... 60
Distributors of antitoxin, ... 85
Abstract of report of county medical inspector, ... 446
Waynesboro, tuberculosis dispensary, ... 57
Waynesburg, tuberculosis dispensary, ... 57
Welfare work, infant, ... 210
Wellsboro, tuberculosis dispensary, ... 60
West Chester:
Tuberculosis dispensary, ... 55
Sanitary index, ... 498
Outbreak of typhoid fever at Villa Maria Academy, ... 1475
West Fairview, tuberculosis dispensary, ... 56
Westmoreland County:
County medical inspector, ... 12
County medical deputies, ... 13
Township health officers, ... 23
School medical inspectors, ... 36
Local registrars, ... 51
Tuberculosis dispensaries, ... 61
Distributors of antitoxin, ... 86
Abstract of report of county medical inspector, ... 449
Whooping cough, 276,317,326,335,338,342,344,346,353,355,365,380,389,392,393,396, 401,402,407,408,409,415,428,437,440,444,448,450,452,460,504
Northampton County, alleged case, ... 276
Whooping cough, death rates from, ... 504
Widal test, ... 395

Wilcox tannery, ... 1312
Wilkes-Barre:
Tuberculosis dispensary, ... 58
Sanitary index, ... 498
Wilkinsburg:
Tuberculosis dispensary, ... 54
Sanitary index, ... 499
Wiliamsport:
Tubeculosis dispensary, ... 58
Sanitary index, ... 499
Wright Chemical Company, ... 1308
Wyoming County:
County medical inspector, ... 12
Township health officers, ... 23
School medical inspectors, ... 36
Local registrars, ... 51
Tuberculosis dispensary, ... 61
Distributors of antitoxin, ... 86
Abstract of report of county medical inspector, ... 451

Yeagertown, typhoid fever, ... 231
York:
Tuberculosis dispensary, ... 61
Outbreak of typhoid fever, ... 1478
York County:
County medical inspector, ... 12
County medical deputy, ... 13
Township health officers, ... 23
School medical inspectors, ... 36
Local registrars, ... 51
Tuberculosis dispensaries, ... 61
Distributors of antitoxin, ... 86
Typhoid fever, ... 234
Abstract of report of county medical inspector, ... 453